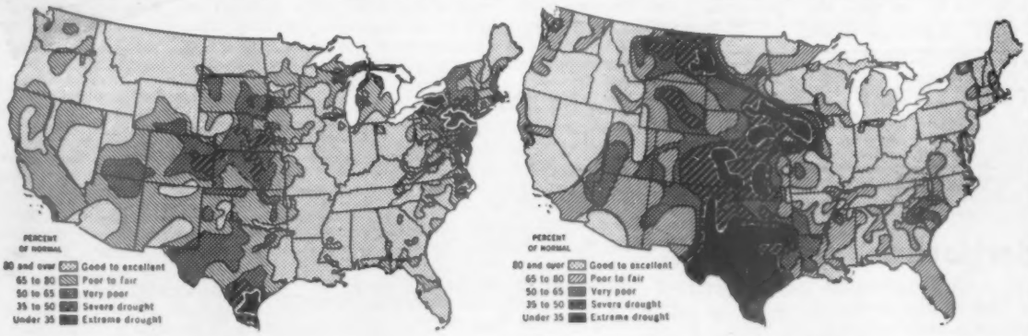
FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 28—Number 33 | AUGUST 18, 1956 | 1 Year $4, 2 Years $7

Pasture Feed Condition Far Below Normal


PERCENT OF NORMAL
80 and over Good to excellent
65 to 80 Poor to fair
50 to 65 Very poor
35 to 50 Severe drought
Under 35 Extreme drought
PERCENT OF NORMAL
80 and over Good to excellent
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August 1, 1955 — August 1, 1956

DROUTH HURTS IN MANY AREAS—The pasture feed situation on Aug. 1, 1956, was far from satisfactory, the U.S. Department of Agriculture said in the latest crop report. The national Aug. 1 average condition at 70% of normal was 6 percentage points below a year ago and 9 points under the average level for the date. Drouth conditions persisted in many Great Plains and south central areas. The critical sections shown on the map contrast sharply with the good pastures in north Atlantic, east north central and far western states. Western range feed on Aug. 1, USDA said, averaged lowest for that date since 1934, with more than a usual decline occurring during July. The pasture feed condition is rated according to the current supply of pasture feed for grazing. "Normal" condition is that feed expected from existing stands under very favorable weather conditions. The map emphasizes the need for more supplemental feeding in many areas and indirectly points up crop conditions and livestock feeding problems and possible effects on feed business in some sections.

• • •

More Oklahoma, Texas Counties in Drouth Feed Plan

WASHINGTON—The U.S. Department of Agriculture this week announced designation of additional Oklahoma and Texas counties as drouth disaster areas in which eligible stockmen may obtain feed at reduced cost for a limited time.

Ten counties in Oklahoma and eight in Texas have been added to the drouth feed program which permits farmers and ranchers to obtain designated grains or emergency mixed feeds at the lower prices.

USDA also announced that the Secretary of Agriculture, because of continuing serious drouth, had consented to permit livestock producers in specified parts of Texas and Iowa

(Continued on page 8)

Illinois Produces Broilers on 1.93 Feed Conversion Rate

URBANA, ILL.—The University of Illinois Experiment Station has reported producing a pound of broiler with less than 2 lb. of feed.

Illinois poultry research workers, it was noted, have known since 1947 that they could put a pound of gain on broiler chicks with less than 2 lb. of feed. But until this year, they were able to do it only with laboratory diets that were impractical for broiler growers to feed.

Dr. H. M. Scott, head of the poultry division at the University of Illinois, under whose supervision the experimental rations have been developed and tested, said the key to the new ration is finding the right balance between energy and protein in the diet.

When the researchers added fat for energy to the conventional 20% protein chick ration, they found that the chicks gained less than before and did not feather as well or as fast. However, when they increased the percentage of protein in the diet along with the fat, they stimulated growth and got normal feathering.

Work so far indicates that broiler rations with 7% of fat added should contain about 25% protein, according to the Illinois report. There was little or no advantage in doubling

(Continued on page 93)

Purina to Build Mill in Mexico

ST. LOUIS—The Ralston Purina Co. has set up a subsidiary in Mexico for the manufacture and distribution of the full line of Purina Chows, it has been announced by Raymond E. Rowland, president.

A 23-acre mill site has been obtained at Queretaro, 162 miles north of Mexico City. Construction of a mill will commence in the near future. The subsidiary, Ralston Purina de Mexico SAdeCV, is capitalized at one million pesos.

In making the announcement, Rowland commended the Mexican government for its program to raise the standard of living in Mexico. "The Mexican government is doing a great deal to improve the supply of human food by encouraging the expansion and modernization of animal agriculture in Mexico," he said. "Livestock, poultry and dairy farmers are better informed than ever before. They are eager to use modern scientific rations and are capable of making good use of them."

The Ralston Purina Co. now has 41 mills in the U.S. and Canada. Three new mills are under construction in the United States.

FEEDSTUFFS *Features This Week*

POULTRY NUTRITION: Recent developments in poultry nutrition research were reported at the annual Poultry Science Assn. meeting. Some of the reports are reviewed on **page 14.**

SOYBEAN OIL MEAL: The story of dehulled soybean oil meal, which has gained market prominence with emphasis on high energy feeds, is told by Fred H. Hafner on **page 66.**

SUPPLEMENTS: Robert C. Wornick, on **page 28**, outlines factors considered in formulating supplements containing micro-ingredients.

TRENDS: Important poultry and other agricultural production trends which will affect the feed industry are described on **page 18.**

BARLEY AND FAT: Research findings on the value of barley and fats in feeding poultry are presented by Dr. E. R. Halbrook on **page 53.**

PORTABLE MILL: An article on **page 40** tells how a retailer supplements his feed mill business with a mobile unit.

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New Drouth Hay Program Announced

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—Ezra Taft Benson, secretary of agriculture, this week allocated $1 million to implement a hay and roughage program for eligible livestock producers in drouth disaster-designated areas of Texas.

Mr. Benson pointed out that the hay and roughage program is not limited to Texas and that he will consider requests for similar aid from governors of other drouth-designated states.

In making a joint agreement between the U.S. Department of Agriculture and the state government of Texas, Mr. Benson has accepted a proposal advanced by Texas officials which will provide a hay-roughage program for eligible producers in 160 counties in Texas.

This program represents a rejection by Texas officials of the recommendations and incentives offered by USDA to Texas officials as reported by Feedstuffs last week. The new program is the full responsibility of the local government officials and

(Continued on page 92)

General Mills to Make Creep Feed With Stilbestrol

INDIANOLA, IOWA — General Mills, Inc., this week announced that it has received government approval to manufacture a creep feed for beef calves containing diethylstilbestrol.

This is the first formula feed manufacturer to be given such approval.

Favorable action on the company's application to produce such a feed came from the Food and Drug Administration and was based on more than two years of extensive research conducted at the company's Larro Research Farm at Indianola, the company explained.

Notification that the government had given the green light to a creep feed containing stilbestrol was announced by Dr. H. Ernest Bechtel, director of feed research for General Mills.

The value of the hormone-like

(Continued on page 93)

NEPPCO Sights "Financial Twister"

TRENTON, N.J.—Further support of the advice to reduce broiler production has come from the Northeastern Poultry Producers Council.

The council, in a recent issue of the NEPPCO News, joined others in warning against over-production and noting the need to cut back output to help stabilize broiler prices this fall and winter.

"The broiler industry," the council said, "may well be heading for the

(Continued on page 93)

★ FEEDSTUFFS ★

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The Big Barbecue

THIS summer will be remembered by a lot of individuals for a lot of different things, but there is good reason to suspect that the season as a whole will stand out in the memories of a great many people as the summer of the big barbecue. The fellows who make and sell all the complicated contraptions designed for the simple task of burning charcoal certainly will, and so will the fellows who have been pressing the charcoal into the shape of little pillows. And anyone who has done some sniffing out in the back yard these evenings and week ends certainly knows what's been cooking. The fellows wearing the aprons with funny sayings on them have really gone all out this year—we suspect with more than a little prodding from the ladies who would just as soon get out of dinnertime chores in the kitchen. One fellow we know swears his outlay for charcoal in July was bigger than his gas bill.

Then we have the large-scale barbecues. No one needs to report how popular these events have been in the big broiler areas of the East and West. Or certainly in the South, where they have been smoking away since the days of Scarlet O'Hara. Not everyone has as much fun as Scarlet did, but there sure has been a lot of good eating going on this summer. A good share of this picnic food, naturally, has been chicken. It's had to be—there have been so many broilers on the market, and the prices have been attractive to consumers. And who can turn down half of one of those birds when it's sauced and sizzled the way it should be?

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THE consumption of chicken has been phenomenal this year, as plainly evident by the number of broilers being turned out. If the current rate continues, it is estimated that production will be up 20% from last year. The growing popularity of outdoor eating, we suspect, has contributed a great deal to this, although chicken consumption in general has been expanding rapidly in step with the development of better-to-eat birds. Heavy industry promotion and advertising has helped speed up the process. While the poultry industry's volume has been booming, the feed industry has been benefiting right along with it from the standpoint of vastly increased tonnage. In fact, if it weren't for the sharp increases in poultry feed production this year the industry would be lagging well behind last year's tonnage instead of showing a 5% increase in the first six months of the year. Broiler feed production records made in this period could well be described as part of the barbecue picnic.

★ ★ ★

NOW there are warnings that this picnic season is about over—or should be—just as the signs of fall are beginning to point to the end of outdoor cookery in northern back yards and parks. Poultry industry leaders say that cutbacks in chick placements must be drastic to avoid disastrously low broiler prices this fall and winter. A U.S. Department of Agriculture economist has warned that placements in August must be trimmed by almost one third to bring October marketings in line with last year's levels. The American Feed Manufacturers Assn. has issued similar warnings, urging that feed men, along with breeders, hatcherymen, growers and processors, should voluntarily cooperate in helping the broiler industry achieve reasonable stability. The feed industry, heavily involved in financing, of course, has a big stake in broiler market stability. Balancing production with demand in this instance is an urgent necessity if a nearby price calamity is to be avoided, according to those best informed on the matter. Feed men in a position to cooperate certainly will want to do so, not only because of immediate dangers but also because of longer-term effects. Price disaster this fall certainly could seriously affect broiler feed prospects for months to come.

After all the good times lately it would be a shame to wind up the barbecue with a belly ache and then burp for who knows how long.

★ ★ ★

Quote

FROM the Agricultural Bulletin of the Chamber of Commerce of the United States—"There is increasing concern about the dilemma agriculture and the policy makers will face when and if the time comes when the 'temporary' soil bank is terminated and the reserved land is returned to crop production. Some people have concluded that for this reason the soil bank is another permanent addition to federal farm programs."

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Reports of formula feed sales were varied this week, with manufacturers in some areas noting satisfactory volume for this time of the year and others reporting drab demand. Turkeys and broilers still are the biggest consumers, but price troubles ahead in broiler markets point to probable cutbacks in demand shortly. Turkeys soon will be switched from formula feeds to heavier grain rations. Drouth feed is getting considerable attention in the deep Southwest, helping to make up volume lost in other lines. More interest is being shown by feeders in cattle feed bookings. Soybean meal, alfalfa meal and molasses were stronger this week while millfeed and some other ingredients slipped. The index of wholesale feedstuffs prices advanced .6 point to 81.5 and the feed grain index gained .2 point to 88.2 in the week ending Aug. 15. (Ingredient details on pages 90-92.)

Southwest

Formula feed operations were holding to a satisfactory summertime level in the Southwest this week. Actually, production was no better than five days at any of the mills reporting, which is some decline from the rate of last month. But in view of the nosedive by the broiler industry and failure of the hog business to come up to expectations this year, August activity is encouraging.

The general run of poultry feed business is fairly good and is expected to increase as more new flocks come into production. As indicated, broiler feed demand has dropped, and such promotion is being de-emphasized in line with industry recommendatioins. The Arkansas market has cut back to 18¢ lb., an unremunerative level. On the other hand, turkey feed demand is good, and the productiion volume has hit a season's peak. Cattle feed demand was fair, and the market was spiced by the expansion of the drouth feed program again this week.

Prices were on the upgrade due to increase in protein costs and higher alfalfa meal markets. Soybean oil meal and cottonseed oil meal were main factors behind formula markups of 50¢@$1 ton.

* *

The main concern in Texas was the drouth. The program was expanded against this week to include around 80% of the counties. Only sections of the Panhandle and the Cap Rock area are in satisfactory condition to weather the dryness which engulfs the state. Cattlemen have cut back herds in most instances to the cream of their stock. While the situation has cut into the demand for the regular line of formula feeds, the upturn in drouth feed demand is furnishing mills with increased running time. The 19¢ lb. broiler market has reduced broiler feed demand and the heat is cutting gains. Thus in most feeds except the drouth ration, business is not as good in this area. Prices generally are up $1@2 ton due to higher protein costs.

Northwest

Formula feed volume is holding up quite well in the Northwest, with some mills reporting sales ahead of the level of August a year ago and about steady with July demand as well.

Some manufacturers comment that the total sales are better than expected. Turkey and broiler feeds are helping considerably in some instances, and sales of laying concentrates are about steady. Turkey feed business is due to decline shortly, however, as producers soon will be topping birds off on grain rations.

Dairy feed business has been surprisingly good for some concerns. While pastures in the area are lush because of heavy rains, dairymen apparently are doing a more conscientious job of feeding supplements.

Hog feed business remains disappointing, as sales declines are greater than would be expected as a result of the decline in numbers alone. An explanation for lagging sales from a field representative in one of the better hog territories indicates that many late pigs are being allowed to roam pastures rather than pushed to market weight because farmers realize they will be unable to hit the peak pork market with them.

Operations held steady at one or two shifts, five days a week.

Mountain States

Poultry and turkey feeds still furnish most of the activity in feed sales. There are some signs of the beginning of the seasonal upswing in all phases of the industry, but they are not too pronounced as yet.

Feeder cattle prices are staying up, which has discouraged any big move to fill the feed lots. However, fat cattle prices are more favorable, so some replacements now are moving into the dry lots. With ingredient prices leveling off somewhat there may be more activity soon.

Central States

Formula feed sales were somewhat better in the central states during the week ending Aug. 15, due probably, according to feed manufacturers, to low inventories that had to be replenished.

Poultry feed sales continued good, especially turkey feeds. Hog feed sales were slow for the period. Cattle feed sales were fair, as farmers are now turning to thoughts of what they will need during the coming fall and winter months for their beef cattle.

Order backlogs were from two to four days in most cases, and mills generally reported they were working five days, in some cases six.

Feed sales in general are somewhat ahead of last year at this time, and the outlook is optimistic for most manufacturers.

Ohio Valley

Formula feed sales continued at a very dull pace this week in the Ohio Valley, with no considerable improvement expected for several weeks. With the county fair and vacation seasons in full swing, and with lush pastures and ample farm feeds readily available, farmers are buying only sufficient quantities of formula feeds to insure adequate fattening of poultry and hogs for the fall and winter markets.

Despite the present unsatisfactory situation, manufacturers are confident that with the reopening of schools, now less than three weeks away, and the resumption of more normal farm activities, sales of formula feeds will swing back to much higher levels, very possibly setting new records because of increased consumer demands for meats and eggs.

Formula feed prices eased off an average of 25¢ ton this week, while

(Continued on page 94)

3 WAYS to make a good feed better!

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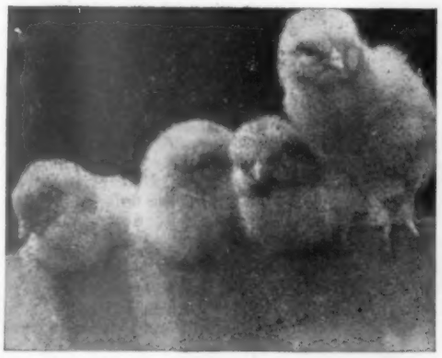

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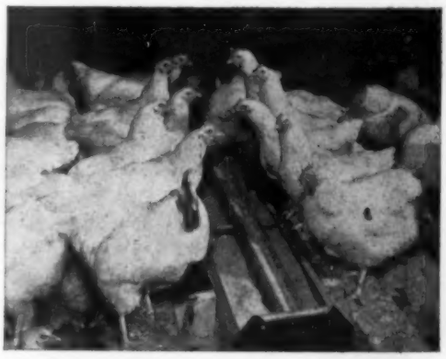

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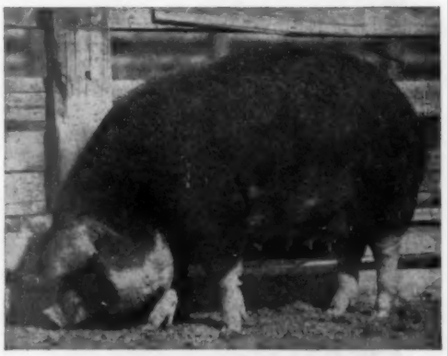

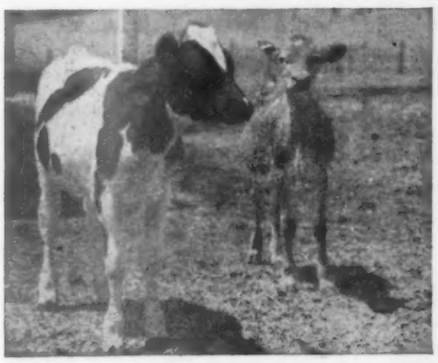

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3 WAYS

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Record Crowd Attends 2-Day Wisconsin Nutrition School

By THOMAS E. LETCH
Feedstuffs Editorial Staff

MADISON, WIS.—A record number of feed men attended the seventh annual Nutrition School for Feed Men, held Aug. 13-14 at the University of Wisconsin, to hear about recent developments in livestock and poultry nutrition and management that will one day enable them to better serve the nation's farmers.

More than 360 persons, about 60 more than last year, were on hand for the talks which covered such topics as amino acids in poultry nutrition, vitamin E and antioxidants in poultry rations, modern steer feeding methods, advances in lamb feeding and management, the energy and protein relationship in poultry rations, feeding of antibacterial agents to hogs and a number of others.

Speakers from the University of Wisconsin staff included Dr. R. K. Froker, dean and director of the College of Agriculture; Dr. Paul H. Phillips, biochemistry; Dr. Gustav Bohstedt, animal husbandry; Dr. N. N. Allen, dairy husbandry; G. M. Werner, dairy husbandry, Dr. E. R. Hauser, animal husbandry; Dr. C. W. Burch, veterinary science; Dr. A. L. Pope, animal husbandry; Dr. F. M. Strong, biochemistry; Dr. Alice I. Goldsby, vterinary science; Dr. Milton L. Sunde, poultry husbandry, and Dr. H. R. Bird, poultry husbandry.

Other university people who either presided over sessions or moderated the questions box sessions included Dr. R. H. Grummer, animal husbandry; Dr. E. E. Heizer, dairy husbandry and Dr. J. L. Rountree, veterinary science.

Speakers from outside the university included Dr. J. W. Cunkelman, chief veterinarian, Swift & Co.; Dr. L. D. Matterson, department of poultry science, University of Connecticut; Dr. L. E. Hanson, department of animal husbandry, University of Miinnesota; W. E. Glennon, president of the American Feed Manufacturers Assn.; Milo Swanton, executive secretary of the Wisconsin Council of Agriculture; Dr. Henry T. Scott, director of the biological laboratory, Wisconsin Alumni Research Foundation, and Henry Moeller, Sioux Alfalfa Meal Co., Vermillion, S.D.

Others who participated in the program as chairman of the sessions included Eldon H. Roesler, executive secretary, Central Retail Feed Dealers Assn.; W. B. Griem, director of the feed control laboratory, Wisconsin State Department of Agriculture, and J. G. Halpin, a professor emeritus at the University.

At the conclusion of the school, Dr. Bohstedt said farewell to the feed men as chairman of the annual conference. He announced that he would soon be 70 and join the professor emeritus group.

The school was started in 1950 with Dr. Bohstedt one of the prime movers behind it. He has been chairman of the conference each year since.

His final remarks were greeted with standing applause from the feed men.

Here are summaries of the poultry nutrition discussions. Summaries of the talks on other subjects will appear in next week's Feedstuffs.

POULTRY—How to achieve the proper balance in essential amino acids in a poultry ration was the topic of Dr. Bird. This balance, he explained, is needed so that protein utilization is as efficient as possible.

The requirement for an essential amino acid is proportional, or nearly proportional, to protein intake. If faster growth is to be permitted by an increase in dietary protein, Dr. Bird said, it would seem that all the essential amino acids should be increased in proportion.

"No single feed ingredient supplies the essential amino acids in exactly the right balance. We like to tell ourselves that we overcome this difficulty by combining different protein supplements to get the right proportions of amino acids. However, even our combinations miss the mark, sometimes by a wide margin," he said.

Comparing Rations

Reporting on experiments done by him at the university, Dr. Bird showed how different rations compared as to total protein and the proportion of total protein that was found to be ineffective.

Using the National Research Council figures for the requirements of chicks fed a diet containing 20% protein, he showed how certain deficiencies of one or more amino acids limit the effectiveness of the total protein in the ration.

"Every step we took to improve protein in this series of diets resulted in a higher level of ineffective protein," he said. "In the long run we cannot afford to sacrifice protein to reach desired levels of certain amino acids. Protein is one of our most costly ingredients. No part of it should be condemned to ineffectiveness."

Dr. Bird noted that in most diets having soybean meal as their major protein supplement, the good effects of adding methionine have been convincingly demonstrated.

Methionine hydroxy analogue has been found to be as effective as methionine itself in a 20% protein diet which is low in methionine, Dr. Bird said. Apparently the chickens can add the necessary amino group. This raises the question as to what might happen if attempts are made to supply several amino acids as nitrogen-free analogues. Dr. Bird continued:

Use of Urea

A methionine diet containing 11% of 13% protein supported more rapid growth if supplemented with methionine than if supplemented with the hydroxy analogue. If the analogue was supplemented with urea or ammonium citrate, it supported as good growth as methionine.

"Thus it appears that utilization of the analogue can be impaired by amino nitrogen deficiency and this deficiency can be corrected by feeding urea or ammonium citrate. This is believed to be the first demonstration of the growth promoting effect of urea or ammonium citrate in

(Continued on page 89)

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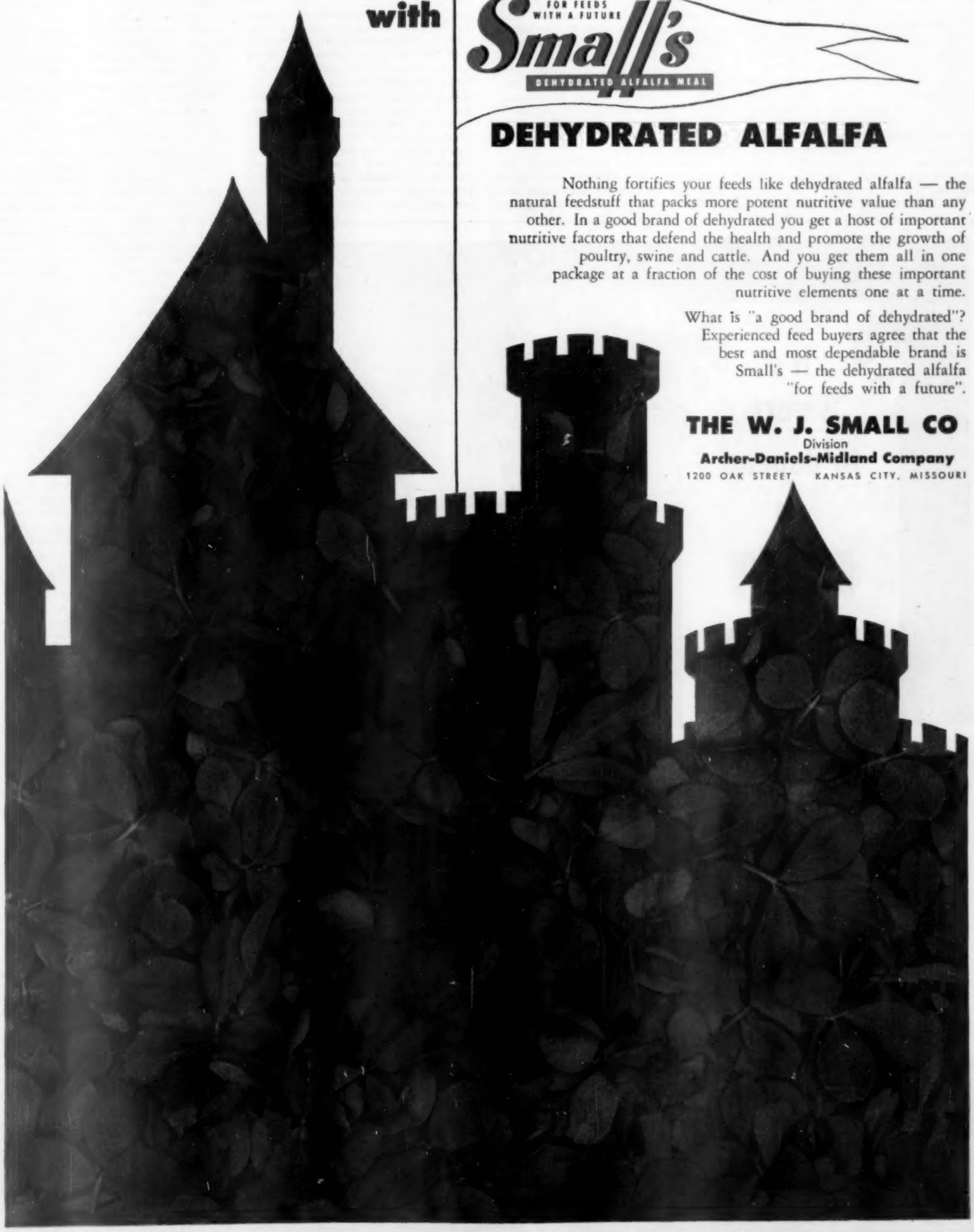


Carolina Feed Group Hears Report on Industry Outlook

By HENRY S. FRENCH
Feedstuffs Editorial Staff

CHARLESTON, S.C.—Four top flight speakers, and a program which allowed ample time for cultural and pleasurable pursuits, drew 200 feed manufacturers, allied tradesmen and their ladies to the summer meeting of the North Carolina Feed Manufacturers Assn., held at the Hotel Fort Sumter in Charleston, S.C., Aug. 10-11. With the morning sessions devoted to business and industry matters, the afternoon and evening were given over to social activities, including opportunities for sightseeing in this scene of southern culture.

"The short term outlook for the feed industry is good," said Dean McNeal, vice president of Pillsbury Mills, Inc., Minneapolis, "although the industry should brace itself for a recession which might start soon after the November election. The recession might last 12 to 15 months."

Mr. McNeal was the first speaker on the program the morning of Aug. 10. He was introduced by Don Huntington, Spartan Grain & Milling Co., Spartanburg, S.C. The program chairman was Gilbert Brauch, Ralston Purina, Charlotte, N.C. W. D. Edward, Edwards Bros. Milling Co., Rutherfordton, N.C., greeted the delegates as they gathered to open the meeting.

Mr. McNeal, speaking on the topic "The Feed Outlook," listed several long range factors which might point the way for feed manufacturers. One of the factors, he said, is a swing to protein consumption and away from carbohydrates. Red meat consumption, he said, has increased 14% since 1920 through 1954; dairy products, 9%; eggs, 26%. Meanwhile, wheat consumption has dropped 36%, and potatoes are down 25%. This trend is expected to become more pronounced.

There also is a trend toward specialization, Mr. McNeal continued. This can be one of the more important developments affecting the feed industry. This means there is a definite move toward bigger feeders, with a corresponding movement away from diversification. More animal units are being fed by fewer farmers. Therefore, each customer becomes more important, and each feeder becomes more efficient.

Larger feeders naturally place a stronger emphasis on lower costs, which calls for more specialized feeds and more bulk handling. More experimental work is being done and better records are being kept. There also is a trend to move livestock and poultry production nearer the centers of human population. This is particularly true of dairy cows and layers.

A greater use of trucks and water facilities for transportation is noticeable. In fact, some plants which were built only a few years ago with an eye to favorable rail rates now virtually are obsolete, Mr. McNeal said.

Government programs, he continued, will continue to be increasingly important. Support programs seem to be recognizing that farmers are grain buyers for feeding, and not principally grain sellers. The new method of computing parity adjusts the values of parity to boost protein, generally, and lower the value of carbohydrates. Although it is too early to appraise the effect of the soil bank program, it appears that it might cause some decrease in the production of grain and increase livestock production and call for more grazing areas.

Economic Outlook

Expanding on his idea that a recession might be expected, Mr. McNeal said that the present short range outlook is for a generally good economic atmosphere with a high level of income. He does not expect the administration to permit any serious economic deflation until after the elections. However, he said, several things are beginning to happen which might call for an economic set-back after the election. We currently are producing more heavy goods, such as cars, than are being sold. Consumer credit is high and perhaps stretched to the limit.

At the annual banquet, held the evening of Aug. 10, Mr. Huntington was awarded a plaque in recognition of his services during the term of his presidency of the NCFMA during 1955. The award was made by W. G. Crawford, Goldsboro (N.C.) Milling Co. The dinner was attended by 159 guests. Presiding at the dinner was Clyde Griffin, Griffin Brokerage Co., Charlotte, N.C.

At the dinner, prizes were awarded to winning golfers who participated in the annual tournament, held at this convention at the Charleston Country Club the afternoon of Aug. 10. Presenting the awards was Rex Edison, J. F. Bess & Co., Gastonia, N.C. The top golfer was Travis P. Barham, St. Regis Paper, Baltimore, Md., who carded a low gross of 75. The low net—70—was shot by Vic Jay, Nopco Chemical Co., Harrison, N.J. The second low gross, a 79, was chalked up by John B. White, White Bag Co., Spartanburg, S.C. B. J. Phillips, Coronet Phosphate Co., Norfolk, Va., won the blind bogie.

Allied Tradesmen Elect

At the annual meeting of the North Carolina Feed Manufacturers Allied Assn., John B. White was elected president of the organization. He succeeds Howard C. Duckett, Diamond Crystal Salt Co., Durham, N.C. Mr. Ducket was awarded a plaque in recognition of his services during his term of office. Making the award was R. Seth Bostick, White Bag Co., Charlotte, N.C. Other officers elected are Thomas R. Watkins, National Gypsum Co., Charlotte Court House, Va., vice president, and Mr. Griffin, who is to continue as secretary-treasurer.

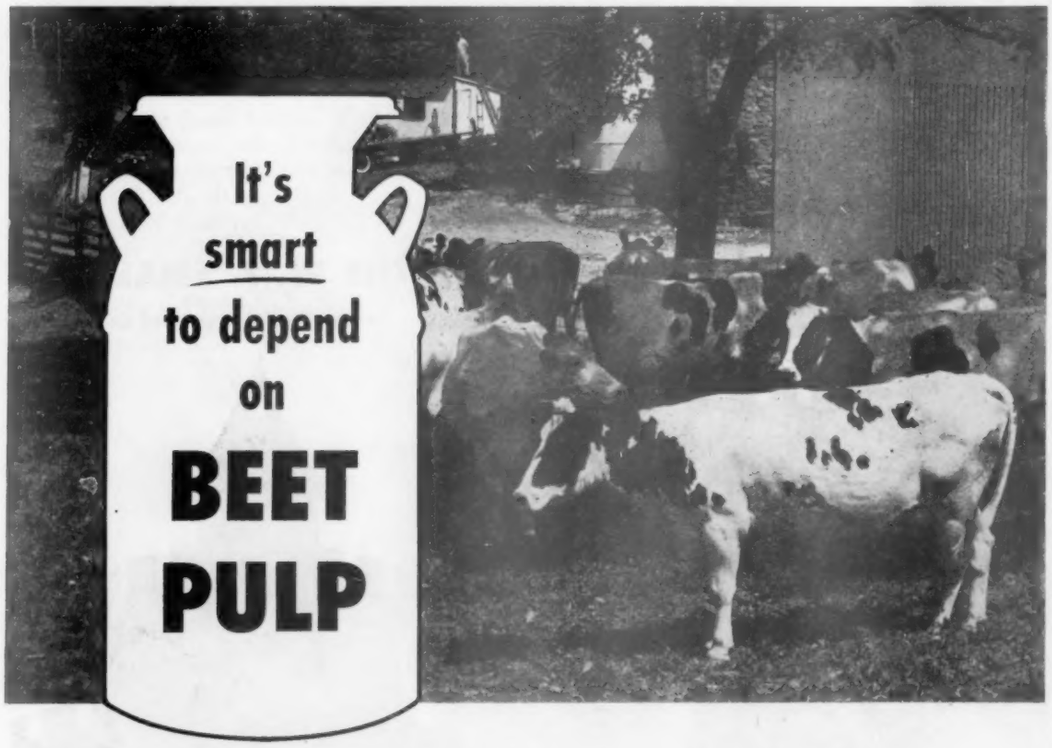
The feed manufacturers, during their brief business meeting, voted to have an ocean cruise in 1957 as their summer outing. The 1958 meeting will be held at the Grove Park Inn at Asheville, N.C.

FDA Speaker

The second speaker of the first day was Dr. John H. Collins, veterinary medical director of the Bureau of Medicine of the Food and Drug Administration, Washington. Dr. Collins discussed the work of the FDA and its relationship to feed manufacturers. His organization, he said, is playing a more prominent role in the regulation of the feed industry, due mainly to the national importance of medicated feed.

This class of products, he said, presents numerous and highly complex scientific and technical problems. There also are major economic questions involved, not only for manufacturers but for farmers, meat packers and consumers. Some of these have not been fully resolved. Over and above all, however, looms one paramount consideration—the protection of the public welfare. This is a basic concept of all food and drug legislation. Medicated feeds cannot be viewed simply in terms of their economic or medical effects on poultry and dairy products, pork, veal and beef. All of us must primarily be concerned with the ques-

(Continued on page 94)



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Soybean Industry Problems, Progress Outlined at Meeting

By DON E. ROGERS
Feedstuffs Editorial Staff

URBANA, ILL.—Soybean processors and growers have many problems, but the one headache common to many basic agricultural crops they do not have is government interference. They were encouraged to maintain this enviable position by Marvin L. McLain, assistant secretary of agriculture, who addressed the joint meeting of the National Soybean Processors Assn. and the American Soybean Assn. at Illini Union, University of Illinois, Aug. 13-16.

Mr. McLain spoke to the processors at their annual banquet Aug. 13 and to the growers the following day.

He said that despite the doubling of soybean production in the past 10 years, domestic and export outlets for beans, oil and meal had managed to handle the output without recourse to government interference. The record-breaking 1956 crop, now estimated at 443 million bushels, is expected to be no exception, although the government stands ready with Public Law 480 provisions to move soybean products into foreign markets if a surplus seems likely to be developing.

Export Program

Gordon O. Fraser, assistant administrator, Foreign Agricultural Service, explained the workings of PL 480 to the processors: "We are frequently asked to explain why and under what conditions an agricultural commodity is or is not eligible for financing under this law. The answer necessarily hinges on the definition of a surplus commodity. The Secretary of Agriculture must make a finding, based on the best information available, as to supplies and expected domestic and foreign sales for dollars. In the case of wheat or cotton, there is no problem, and the calculations are a mere formality to determine the extent of the surplus after dollor sales have been maximized.

"In the case of edible oils, the answer is considerably more involved. For all practical purposes, the CCC has no stocks of oilseeds or edible oils and thus there is no surplus in this sense. But the act also covers a situation where a commodity is 'reasonably expected to be in surplus,' so we can and have used PL 480 to help prevent the building up of government stockpiles as well as to reduce or remove past accumulations.

"We have now reached a time when we are looking at the crop year ahead. Many may have assumed there certainly must be a surp'us of edible oils coming up within the meaning of PL 480 because of the magnificant prospects for the soybean crop this year. With the Aug. 10 report now in hand, there appears to be little doubt this assumption is correct. It is too early in the season to be definite as to the total prospects for PL 480 sales of edible oils in the year ahead, but we will use PL 480 to the fullest extent justified in the light of available U.S. supplies, domestic requirements, anticipated exports for dollars and the requirements for an adequate carryover."

Surplus Crop Problem

Martin Sorkin, office of the Secretary of Agriculture, Washington, pointed out that disposal of surplus crops which results from price support programs seems to be a losing game. During the time the government succeeded in moving out products valued at $6 billion, products worth 50% more than that came into the surplus pool.

He urged that industries affected by government programs be more united in recommendations to government officials. Quite often industry views depend upon individual positions in the market, and this results in confusion, he said. Mr. Sorkin said he viewed the acreage set aside under the soil bank as possible experimental areas for new crops yet to be developed.

He suggested that the newly organized Soybean Council of America

(Continued on page 93)

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Wholesale Feedstuffs Price Index

INDEX NUMBERS OF WHOLESALE FEEDSTUFFS PRICES
BASE PERIOD 1947-49=100

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Aver.
1955-56	80.4	76.4	77.3	77.7	76.3	75.2	79.8	84.7	83.2	81.3	...	...	...
1954-55	89.0	90.7	90.9	91.1	90.6	88.1	85.7	81.6	80.6	80.7	78.7	80.7	85.7
1953-54	82.6	83.5	92.5	95.7	97.7	101.6	109.3	104.8	99.7	101.7	99.2	90.3	96.6
1952-53	110.1	105.5	103.2	100.7	97.1	95.9	91.9	92.4	88.1	88.0	86.5	84.3	95.3
1951-52	108.9	112.1	114.1	115.2	114.3	113.2	115.2	114.6	113.9	112.5	120.7	116.3	114.2
1950-51	87.3	93.8	97.3	99.8	103.3	102.4	102.5	101.3	99.9	101.6	99.8	104.0	99.4
1949-50	86.8	85.8	87.2	84.2	82.7	86.7	90.4	96.8	93.2	103.1	94.4	89.0	90.0
1948-49	86.8	95.4	94.7	92.2	86.1	87.2	92.2	89.9	87.9	93.5	97.7	89.5	91.1
1947-48	117.3	117.3	125.0	135.7	117.2	113.5	114.3	112.6	114.8	107.6	91.7	92.2	113.3
1946-47	94.9	104.8	91.8	86.8	82.6	98.2	93.8	92.9	99.0	106.4	109.2	119.0	98.3

Compiled by Market News Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture.

INDEX NUMBERS OF FEED GRAIN PRICES (CORN, OATS, BARLEY AND GRAIN SORGHUMS) 1947-49=100

Season	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Aver.
1955-56	69.3	69.3	73.0	72.0	73.8	75.4	82.9	84.5	84.3	86.4	...	...	...
1954-55	87.7	85.1	85.0	84.3	82.6	80.5	81.9	84.2	83.0	81.6	75.4	72.8	82.0
1953-54	82.2	82.6	86.5	86.1	85.2	86.6	87.0	88.7	89.2	88.2	89.1	89.4	86.7
1952-53	92.9	90.5	92.8	90.3	87.3	88.2	87.4	89.1	86.7	88.1	88.9	89.2	89.3
1951-52	98.5	103.9	108.7	107.7	101.8	102.0	101.3	101.7	101.1	100.1	101.1	99.8	102.3
1950-51	82.5	86.5	92.0	95.8	99.5	97.2	98.0	97.5	94.1	95.7	96.4	97.5	94.4
1949-50	68.9	69.0	72.9	73.5	73.3	75.4	80.3	83.7	83.8	86.3	83.9	84.1	77.9
1948-49	82.5	79.4	81.2	80.7	73.8	78.7	78.0	74.8	75.1	76.9	71.5	72.3	77.1
1947-48	131.7	136.0	145.2	150.3	124.6	130.0	129.8	127.9	127.7	114.4	103.0	96.4	126.4
1946-47	99.6	82.8	77.9	76.9	80.3	96.8	99.4	99.6	114.5	115.4	128.2	136.2	100.6

Compiled by Market News Branch, Grain Division, Agricultural Marketing Service, U.S. Department of Agriculture.

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ACE BRAND ROLLED OATS (Steam processed)
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STEEL CUT OAT GROATS
BOLTED OAT FLOUR
GLENWOOD FEEDING OAT MEAL
FALCON BRAND PULVERIZED WHITE OATS
STANDARD BRAND PULVERIZED WHITE OATS
DAIRY BRAND COARSE GROUND OATS
CRESCENT BRAND PULVERIZED OATS
CORN OATS PELLETS (Corn-Oats)
ENERGEE PULVERIZED OATS
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
APEX BRAND CRIMPED WHITE OATS
OAT FEED
STEAM ROLLED WHOLE BARLEY
GROUND BARLEY
PEARLED BARLEY FLAKES (Max. 2½% fiber) (steam processed)
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POULTRY SCIENCE AWARD—Shown here are key persons at the awards banquet at the 45th annual meeting of the Poultry Science Assn. at North Carolina State College, Raleigh. Dr. Stanley J. Slinger (center), Ontario Agricultural College, Guelph, recipient of the American Feed Manufacturers Assn. $1,000 award for outstanding contribution to poultry nutrition research, was presented with his check by Dr. Robert Spitzer (left), Murphy Products Co., Burlington, Wis., chairman of the AFMA Nutrition Council. The announcement of the Poultry Science Assn. research awards committee was made by its chairman, Dr. B. R. Burmester (right), U.S. Department of Agriculture Regional Poultry Research Laboratory, East Lansing, Mich.

Number of Potential Layers Up 2% From Year Earlier

WASHINGTON — The number of potential layers on farms on Aug. 1 was up 2% from a year earlier, according to the U.S. Department of Agriculture's latest crop report.

The total number of potential layers (hens and pullets of laying age plus pullets not of laying age) was approximately 482 million.

Increases in the north central and south central states more than offset decreases in other parts of the country. There was no change in the south Atlantic states.

Pullets not of laying age on Aug. 1 were estimated at about 201 million, 1% above a year ago. Increases from a year ago in the north central and south central states more than offset decreases in other parts of the country.

On Aug. 1 about 42% of the potential layers were pullets not of laying age to be added to the laying flocks this fall and winter, the same as a year earlier compared with the average of 49%. This indicates that pullets are being moved into laying flocks earlier than a few years ago.

The increase in potential layers and pullets not of laying age is just about in line with indications noted in a previous USDA report on the number of chickens raised on farms in 1956. That report showed a 2% increase in number of chickens raised. (Feedstuffs, Aug. 4) USDA predicted a slight increase in the size of the laying flock on Jan. 1, 1957.

There was an average of about 281 million layers in farm flocks in July —2% more than a year earlier. Numbers of layers were up from last year in all parts of the country except in the west north central states, where they were down 3%. Increases from last year were 6% in the south Atlantic states, 5% in the south central states, 4% in the east north central area and 2% in the north Atlantic and western regions.

Farm flocks laid 4,752 million eggs in July, a record high for the month and 3% more than in July last year. Two thirds of the increase was due to a larger number of layers and one third to an increased rate of lay. The rate of egg production in July was 16.9 eggs per layer, compared with 16.7 last year and the average of 15.2 eggs. It was at a record high level in all parts of the country.

Hens and Pullets of Laying Age, Pullets Not of Laying Age, Potential Layers on Farms, August 1

Year—	North Atlantic	E. North Central	W. North Central	South Atlantic	South Central	Western	United States
Hens and Pullets of Laying Age on Farms, Aug. 1 (thousands)							
1945-54 (average)	44,521	53,837	76,179	27,841	50,882	29,182	282,441
1955	52,202	51,509	71,125	26,568	39,178	33,541	274,123
1956	52,863	54,189	70,728	28,247	41,027	34,021	281,075
Pullets Not of Laying Age on Farms, Aug. 1 (thousands)							
1945-54 (average)	40,288	58,824	86,013	23,786	39,950	20,400	269,260
1955	32,609	40,977	66,264	18,548	23,798	15,738	197,934
1956	30,605	44,889	69,288	16,802	25,550	13,381	200,523
Potential Layers on Farms, Aug. 1* (thousands)							
1945-54 (average)	84,808	112,661	162,192	51,627	90,831	49,583	551,702
1955	84,811	92,486	137,389	45,116	62,976	49,279	472,057
1956	83,468	99,078	140,016	45,049	66,585	47,402	481,598

*Hens and pullets of laying age plus pullets not of laying age.

Amount of Corn Under Support Up Slightly

WASHINGTON—A total of 421,143,775 bu. of 1955-crop corn had been put under government price supports by July 15, the U.S. Department of Agriculture reports. This is an increase of less than 1 million bushels from the June 15 report, and since the final date for putting 1955 corn under support was May 31, there will be little further change in this total.

USDA also detailed loan repayments and loan purchase agreement deliveries for 1955 crop through July 15. Of a total of 356,133,822 bu. it reports loan repayment on 7,419,059 bu. In addition, 65,009,953 bu. were placed under purchase agreement support. Through that date, 10,202,581 bu. had been delivered to the Commodity Credit Corp. The amount of purchase agreement corn which producers have elected to deliver has not been announced, and only a small quantity, 580,660 bu. have been delivered under this program.

Practically all of the soybeans put under loan from the 1955 crop, 27,489,454 bu., have been redeemed by producers.

USDA also reported the following quantities of 1956 crops under loan as of July 15: Barley, 1,886,193; grain sorghums, 1,975,410; oats, 5,887,459; wheat, 43,956,022.

John Peterson Retires; R. C. Woodworth New Cargill Director

MINNEAPOLIS — The retirement of John G. Peterson as chairman of the board of Cargill, Inc., has been announced by the company's board of directors. The move was in accordance with company seniority policy, the announcement said.

At the same time the board announced the election of Robert C. Woodworth to board membership and his appointment to the company's finance committee, of which Mr. Peterson was also chairman. Mr. Woodworth is vice president for public relations.

Mr. Peterson, who came to Cargill as its financial officer in 1933, had been second vice president of the Chase National Bank of New York. He became a member of Cargill's board of directors in 1936 and its chairman in 1953. He was also a member of the executive committee.

Mr. Woodworth, who has been in the grain business since 1919, came to Cargill in 1942 and was elected a vice president in 1949. He was on the board of directors of the Minneapolis Grain Exchange from 1942 to 1950, was president of the exchange from 1950 to 1951, and is a past chairman of the National Grain Trade Council. He is presently first vice president of the Terminal Elevator Grain Merchants Assn.

The board announced that all board members and officers of the company were reelected. The board now comprises: Austen S. Cargill, James E. Dorsey, Erwin E. Kelm, Cargill MacMillan, John H. MacMillan, Jr., H. Terry Morrison, James C. North, Fred M. Seed and Mr. Woodworth.

Construction to Start On New Hubbard Mill

MANKATO, MINN.—Contracts for construction of Hubbard Milling Co.'s new feed manufacturing plant at Cedar Rapids, Iowa, have been awarded, and construction work will begin next week, according to an announcement by C. B. MacLeod, company president, Mankato.

While plans for construction of the new plant were announced in May, actual awarding of contracts and start of construction were delayed by a change in design necessitated when soundings were made on the plant site in southwest Cedar Rapids between the Crandic and North Western railroads near Hawkeye Downs.

Mr. MacLeod said contracts for construction of the plant have been awarded to the Abell-Howe Co., Chicago construction firm with a branch office in Cedar Rapids.

Plans for the mill were drawn by the T. E. Ibberson Co., Minneapolis, which will supervise the work of the general contractor.

Actual construction will begin Aug. 20. First to be completed will be an office building and warehouse, expected to be ready for occupancy in November. The main plant will be completed and ready for operation in the spring of 1957.

Mr. MacLeod said the plant will be modern in every detail and will incorporate the latest equipment for automatic handling of ingredients and outgoing feeds and concentrates. Capacity of the plant will be about 500 tons a day.

The company manufactures Hubbard's Sunshine feeds and concentrates.

"We're happy that contracts have been signed and that work will begin next week," Mr. MacLeod said, "and we regret the delay caused by the change in design our engineers found necessary after soundings were taken in May. The engineers and contractors have been instructed to proceed as rapidly as possible. Actually, some of the equipment already has arrived in Cedar Rapids and is being stored until our own buildings are complete."

DROUTH COUNTIES

(Continued from page 1)

to graze their soil bank acreage reserve.

New Listings

The new listings for the feed and grazing programs are:

Iowa (1)—Monona County, and the remainder of Harrison County not heretofore designated. (Grazing program.)

Oklahoma (10) — Atoka, Bryan, Carter, Garvin, Love, McClain, Marshall, Murray, Roger Mills, Woodward. (Feed grain program.)

Texas (8)—Camp, Falls, Franklin, Grayson, Hopkins, Hunt, Morris, Titus. (Both programs.)

These listings bring to 372 the number of counties or parts of counties in 11 states in which eligible stockmen may graze their soil bank acreage reserve without losing eligibility to participate in the soil bank program.

These include: Colorado, 15; Iowa, 34; Kansas, 25; Missouri, 4; Montana, 10; Nebrask, 50; New Mexico, 31; North Dakota, 4; South Dakota, 35; Texas, 160; Utah, 4.

This also brings to 265 the number of counties or parts of counties in nine states in which eligible stockmen may participate in the emergency feed grain program.

These include: Arizona, 5; Colorado, 15; Kansas, 25; Nevada, 1; New Mexico, 31; Oklahoma, 16; South Dakota, 8; Texas, 160; Utah, 4.

As has been explained previously, the emergency soil bank grazing program should not be confused with the drouth emergency feed program. In some cases, certain counties are in both programs, but in others, counties are in only one program.

Purina Earnings Increase as Sales Total Declines

ST. LOUIS—Nine months earnings of the Ralston Purina Co. showed a substantial gain over the similar period of last year. The company report for the three quarters ending June 30 revealed net earnings after taxes of $12,052,675, compared with $10,474,987 in the similar period of the previous fiscal year. This amounted to $9.55 per share on outstanding common stock as against $8.20 in the previous year.

Net sales for the nine month period were $292,479,992, a slight decline in total from the $295,725,388 in the like period last year.

Donald Danforth, board chairman, said the April-June quarter was the largest of fiscal year in volume in profit. He said both milling facilities and operating costs have been expanded and "it would be a reflection on our management if these improved results did not follow. We are still short of the objectives we have set for ourselves."

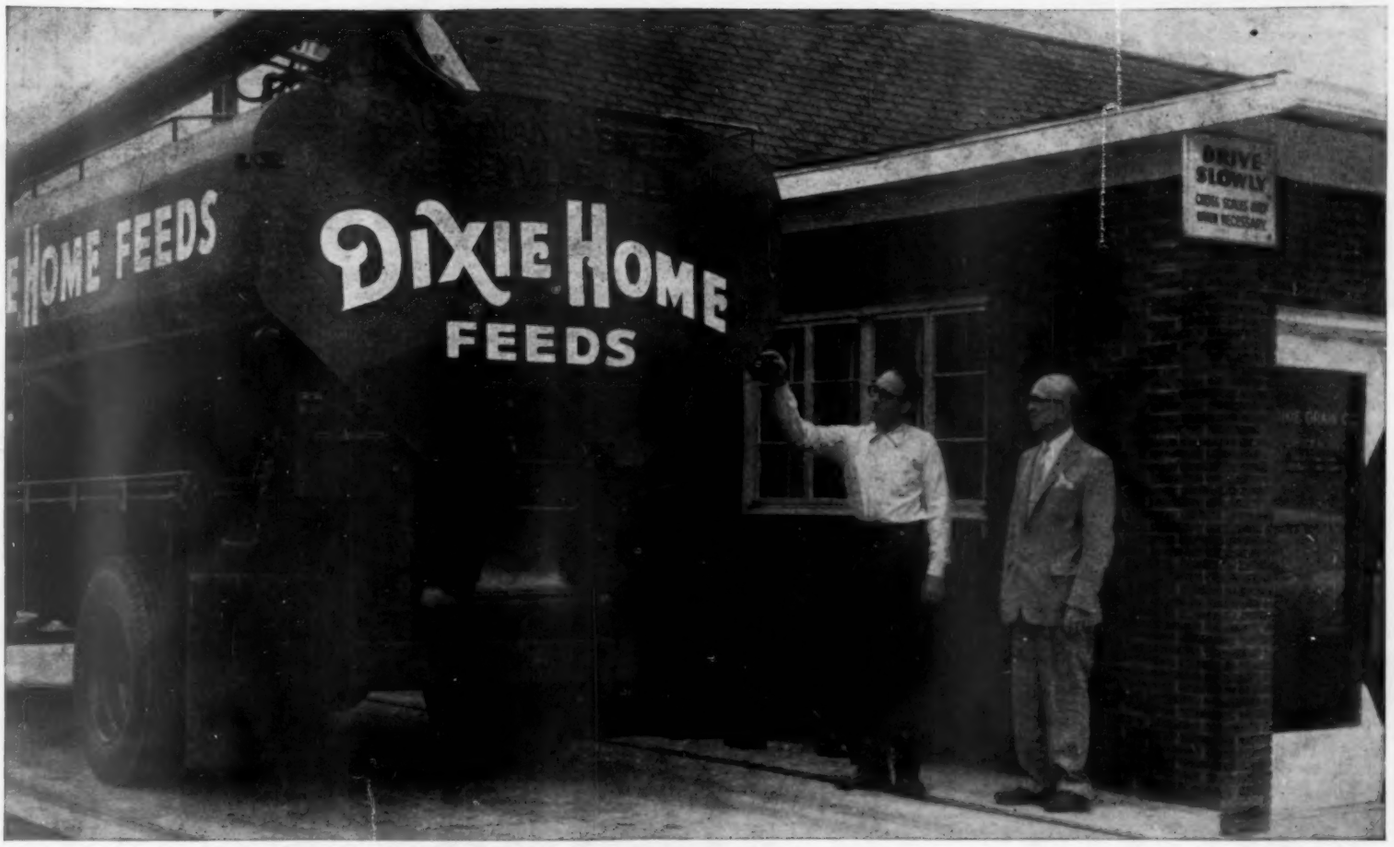
Delmarva Broiler Price Dips Again

SALISBURY, MD. — Prices received by broiler growers in the week ended Aug. 11 slid to 19.32¢ lb. A week earlier the price was 20.49¢ and a year ago the price was 28.3¢.

According to the Maryland-Delaware Crop Reporting Service, broiler chick placements in Delmarva, at 3,060,000 for the week, were 3% less than a week earlier but 11% more than a year ago.

Nationwide, chick placements in 22 reporting states totaled 23,642,000 for last week. This was 1% less than the previous week but was 17% more than during the same week a year ago.

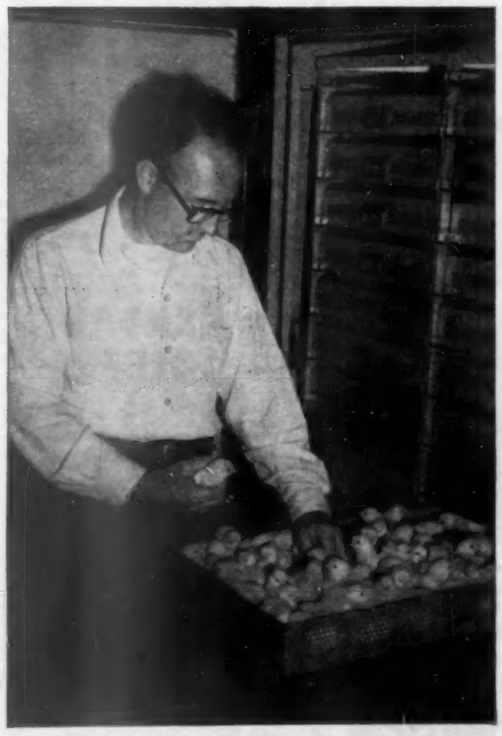
Egg settings in 22 states totaled 32,575,000. This was 2% less than the previous week but 27% more than during the same week a year ago.



Henry Tilford, son and father, co-managers of Dixie Grain Company, inspect one of their new bulk-delivery trucks. Modern labor-saving equipment has contributed to progress marked by this Mid-south feed mill.

Mid-south feed mill records further progress on 50TH anniversary

Increases Feed Efficiency 8%... Cuts Marketing Time 4 Days



Henry Tilford, shown with part of a new hatch of broiler chicks. Dixie Grain places over 200,000 broilers a week from this hatchery.

The Dixie Grain Company, Shelbyville, Tenn., keeping pace with their progress over 50 years, reformulated their broiler feeds in the fall of 1955. The new broiler rations were formulated according to the Du Pont Methionine-energy concept. The rations have a higher energy content balanced with the proper amount of added Methionine.

This new balanced ration was fed to broilers in four growing centers of the Mid-south. Chicks at each of these centers are uniform—all are supplied from the Dixie Grain Company's hatchery—200,000 are placed each week of the year. Production records are complete—growing operations are by contract, under supervision of the Company's service men.

Comparing the records for May of this year against May of 1955 for each of the four growing centers, Dixie Grain Company found that the 1956 records show 8% better feed efficiency and that broilers reached market weight in four days' less time.

Make sure your broiler feeds are designed to take full advantage of their energy potential. For the lowest possible cost per pound of meat, be sure your feed contains enough Methionine.

E. I. DU PONT DE NEMOURS & CO. (INC.)
Grasselli Chemicals Department
Wilmington 98, Delaware
Du Pont Company of Canada Limited, 85 Eglinton Avenue East, Toronto

Methionine

DU PONT
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BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY

Koppers BHT Antioxidant protects young poultry from encephalomalacia because it stabilizes vital nutrients in feed, helps prevent their deterioration during processing and storage. It also protects added fats against rancidity.

This effective protection now comes in a convenient new powder form. Called Koppers Micro-Ground BHT, it was especially developed by Koppers for dry mixing in animal feeds. Just one-quarter pound in a ton of feed stabilizes vitamins A and E, and carotene. Keeps young poultry healthy and improves their color. It is odorless, colorless and tasteless, and *has been approved for use in both animal and human foods.* Call or write for more information. Koppers Co., Inc., Chemical Division, Pittsburgh 19, Pennsylvania.

Koppers BHT is distributed by:

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DIAMOND V BRAND

Fortify your feeds with

LIVE YEAST CULTURE

(Especially Prepared for Dry Mix Feeding)

Supplies: Vitamin B_{12} activity, live yeast digestive enzymes, B complex vitamins, plus other potent unidentified factors. Improves appetite, digestion (including rumen aid), health, growth, production. Increases feed utilization — lowers feed cost.

Live yeast values improve feeding results in recent State conducted tests.

New Yeast Folder Available

write . . . DIAMOND V MILLS, INC. • CEDAR RAPIDS, IOWA

UNCLE TOM'S FEED FABLES

I was at a feed convention the other day and somebody introduced me to a rather elderly gentleman that was sellin' feed mixers of some kind. After he left our group one of the boys said, "Too bad about Jim. He's gettin' awfully hard of hearing." One of others said, "That's what you think! He may not seem to be gettin' what's goin' on all the time but you just whisper, 'Jim, I'd like to buy that mixer of yours,' and he'll hear that all right!"

There are people like that. We used to say Grandma was hard of hearing. She'd sit in that old rocker by the window with her sewing for hours at a time and never seem to hear us kids at all and believe me, we were a noisy bunch. But just let one of us slip with a cuss word and she'd catch the culprit by the ear and into the kitchen we'd go to get our mouth washed out with that old black "Grandpa's tar soap"!

She heard what she wanted to hear, all right.

Salesmen today are just as good as ever and maybe better, but that old timer had automatic ear muffs. He would tell his story and the ears would catch everything until the prospect started to say "no," then they'd just close up and stay closed till he got control again. He just never heard a "no," but the "yes's" came through O.K.

Heavy Bean Crush, Good Crop Prospects Trim Meal Price

WASHINGTON — Crushings of soybeans from October, 1955, through June, 1956, totaled more than 221 million bushels, compared with 189 million bushels in the same months last season, the U.S. Department of Agriculture points out in its quarterly soybean market summary.

In July bulk solvent soybean meal at Decatur (unrestricted) averaged $54.70 ton, compared with the five-year average price for July of $81.80, a drop of nearly 33%.

Better than average yields and the largest acreage of record point to a crop of 443 million bushels this year, based on August estimates. This would be nearly 20% larger than last year's record crop and 75% above the 10-year average, USDA points out.

The summary presents this additional data on the soybean situation:

Stocks of soybeans in all positions on July 1 amounted to 64.2 million bushels. These compare with 66.5 million a year ago and 35.6 million two years ago. Farm stocks on July 1 were low, amounting to 7.1 million bushels compared with 32.8 million in 1955. Interior mill and elevator stocks at 9.4 million bushels totaled only about half those of a year earlier. Over 11 million bushels were stored in terminals as against only 2.4 million a year ago. Stocks at processing plants totaled 36.7 million bushels, against only 10.8 million a year ago.

Exports Large

A record of nearly 57.7 million bushels of beans were exported October-June this season as against 48.7 million last season. Soybean exports

"We average 100 tons bulk feed per week...on long hauls of 50 to 100 miles from mill to dealer"...

says Large Feed Mill of its new

BAUGHMAN BULK FEED BODY

"Our bulk tonnage is by far the easiest tonnage we have," continues this well-known mill. *Easier* because Baughman Bulk bodies offer completely automatic loading and unloading . . . *faster,* too, because they carry twice the load of bag trucks . . . *money-saving* because they cut labor costs, bagging and back-breaking handling. *Customers also profit,* with fresher, lower-cost feed.

FOLLOW THE TREND TO BULK FEED...Save Dollars and Customers!

BAUGHMAN

BAUGHMAN MANUFACTURING CO., INC.

106 Shipman Road Jerseyville, Ill.

need new selling tools?

TO HELP YOUR DEALERS SELL MORE FEED!

LOW COST **STORE POSTERS**

CUSTOM BUILT OR STOCK DESIGN

Printed in full color to attract attention and suggest your brand. Can be used as window, counter or floor displays, or can be tacked up on wall to do a year round selling job. Write today for free samples and low prices.

LOW COST **HANDOUT FOLDERS**

Fully illustrated and colorfully printed in 2 or 3 colors. Prepared by men who are experienced in farm management. Choice of a variety of sizes to meet your budget. Available for every type of feed. Write for free samples and low prices.

LOW COST *REFLECTORIZED* **METAL SIGNS**

By reflecting the light of passing cars, these weather-proof signs do a selling job **Day and Night!** Individually designed for your feeds. Used along the road or at dealers' stores. Send for more information and low prices.

TOBIAS Enterprises

225 North Michigan Ave.

CHICAGO 1, ILLINOIS

Robert E. Kleinhans

SALES MANAGER — Robert E. Kleinhans has been appointed sales manager of Seedburo Equipment Co., Chicago, according to an announcement by Rex E. Yocum, president of the company. Mr. Yocum said Mr. Kleinhans has had wide experience in the testing, grading and handling equipment field and is familiar with the problems of grain elevators and allied agricultural trades.

by country of destination, in million bushels, with comparable figures a year ago in parentheses, were as follows: Canada 6.9 (6.9); Japan 18.0 (16.8); Netherlands 8.1 (5.6); Germany 11.1 (5.2); Denmark 4.2 (2.3); France 1.3 (2.1); United Kingdom 1.5 (1.4); Israel 1.1 (2.1); Formosa 2.4 (3.8); others 3.1 (2.5). A record of 347.1 million pounds of soybean oil, both crude and refined were exported the first 9 months of the season as against 32.4 million in the same months last season.

Soybean prices at the farm averaged $2.11 per bushel the first four months of the season. Although this was somewhat above the 1955 average loan rate of $2.04 bu., farmers put over 30 million bushels of 1955-crop soybeans under price support. However, farm prices advanced to nearly $3 bu. in May. As a result, practically none of the soybeans under support were delivered to the Commodity Credit Corporation. The 1956-crop soybeans will be supported at an average of $2.15 bu.

Prices Back Down

Soybean prices at Illinois country points averaged $2.41 bu. the first week of August, or about 2¢ above the same week a year ago. Reflecting the record supplies, prices at the beginning of the season were the lowest since 1949. However, with heavy export demand for both soybeans and soybean oil, prices advanced sharply and in May averaged $3.10 bu. at Illinois points. With another record crop in prospect, soybean prices declined to $2.41 the first of August.

NAME CHANGED

TAMPA, FLA.—The name of Crittendon-Smith, Inc., has been changed to Alexander-Smith, Inc., according to R. K. Alexander, vice president and general manager of the grain and feed brokerage firm.

M. C. Named for Exchange Dinner

MINNEAPOLIS — Fredric H. Corrigan, vice president, Van Dusen-Harrington Co., Minneapolis, will be master of ceremonies at the 75th anniversary dinner of the Minneapolis Grain Exchange Sept. 12 at the Nicollet Hotel here.

The announcement was made by W. S. Walsh, Walsh Grain Co., chairman of the exchange's public relations committee.

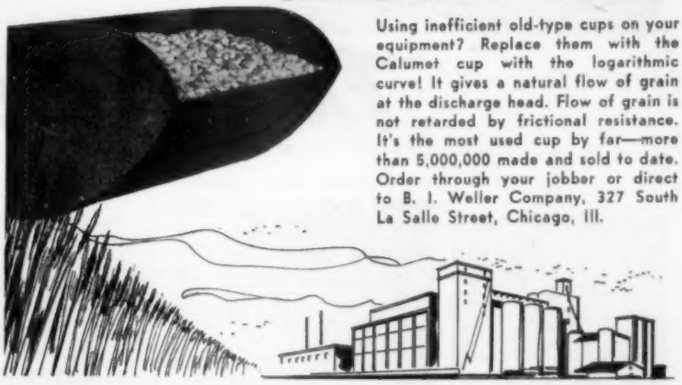
Main speaker will be Ezra Taft Benson, secretary of agriculture, who will fly to Minneapolis from Washington to address an anticipated gathering of 500 persons. Dr. O. B. Jesness, head of the department of agricultural economics, University of Minnesota, will introduce Mr. Benson.

Superior Addition Nears Completion

OKLAHOMA CITY — Superior Feed Mills expects to have its new $1 million addition in operation by Oct. 1, according to B. D. Eddie, president.

Outside construction has been completed, but installation of equipment and wiring is still under way.

Time to Replace With CALUMET CUPS



Using inefficient old-type cups on your equipment? Replace them with the Calumet cup with the logarithmic curve! It gives a natural flow of grain at the discharge head. Flow of grain is not retarded by frictional resistance. It's the most used cup by far—more than 5,000,000 made and sold to date. Order through your jobber or direct to B. I. Weller Company, 327 South La Salle Street, Chicago, Ill.

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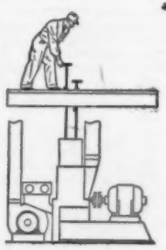

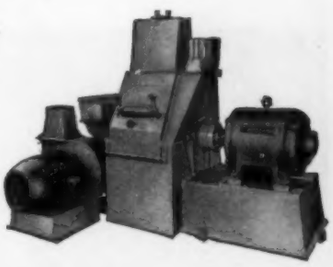

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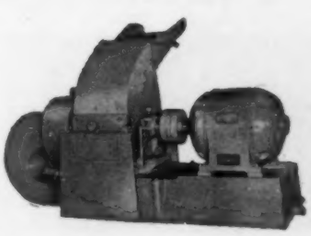

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Double Your Tonnage!

Triple Your Profits! WITH

Lester G. Frey of Frey's Hatchery, Winterset, Iowa, is shown at his store. Since his Franchise with Honeggers, he has enjoyed the best single month's business he has had in 20 years of business.

This is one of a series of ads featuring good businessmen who have doubled their tonnage with the Honegger Program.

Exclusive territory franchises still available in some areas. Some aggressive dealer will double his tonnage in your area with Honeggers' Big "H" Feed Franchise. It might as well be you!

Watch for a series of Ads featuring Good Businessmen who have doubled their tonnage with the Honegger Program.

FREY'S HATCHERY
PHONE: 484
110 EAST COURT AVE.
WINTERSET, IOWA

July 3, 1956.

Honeggers' and Co., Inc.
Fairbury, Illinois

Gentlemen:

We are so well pleased with the Honegger Franchise that we wanted to let you know what it is doing for us. We had our open house on April 28. During May our first full month of business as a Honegger Dealer we sold one hundred twenty six tons, the best month we have ever had in our twenty years of business.

Your company has given me valuable help and assisted my outside salesman in getting off to a good start.

We have sold Honegger Chix where we have not been able to sell before. With the Honegger Franchise we are covering a larger territory with the help of Honegger Feed Dealers and Salesmen in other communities.

We have several building prospects for Honegger Buildings for this fall. We are sure to sell these people after they see the results of good breeding and the laying ability of the Honegger Chix. The feeders are more than satisfied with the results of Big "H" Feeds.

Thanks for helping us get off to a good start with the Honegger Franchise.

Yours truly,

Frey's Hatchery
Luther G. Frey

HONEGGERS' BIG H FEEDS CAN TRIPLE YOUR PROFITS!

THE HONEGGER PROGRAM

WHAT OTHERS HAVE DONE...YOU CAN DO ALSO; WITH HONEGGERS' COMPLETE PROGRAM

HONEGGER FEEDS

Honeggers' offer a complete line of feeds and complete feeding programs that help increase your tonnage. The Honegger line is a "profit-package" backed by continuous research and a rapidly increasing number of enthusiastic users.

HONEGGERS' "EGG FACTORY"

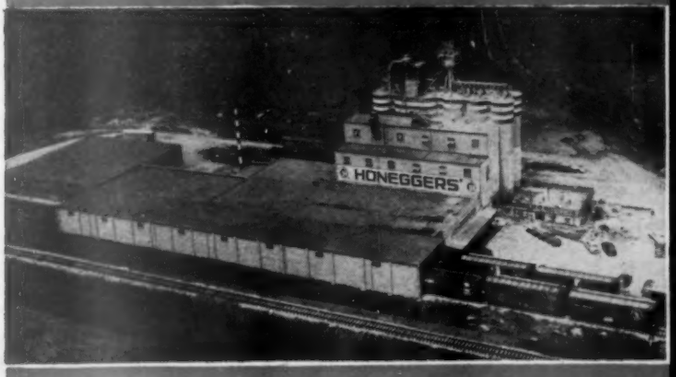
Each dealer receives a franchise to sell Honeggers' exclusive "Egg Factory" program in his area. This is a plan featuring the nationally famous Honegger Leghorn, the Honegger Poultry House and other Farm Buildings and Honeggers' feeds for all livestock and poultry. What a natural for increasing tonnage and profits! Remember, in only a year's time, 500 birds will eat a carload of feed.

HONEGGERS' LIVESTOCK AND POULTRY EQUIPMENT

With Honeggers' wide variety of dependable livestock and poultry equipment, and accompanying farm supplies, Honegger dealers have a source of supply which features unequalled dealer service. Your customers will come to depend on you as their one-stop dealer for all poultry and livestock programs.

HONEGGER FARM BUILDINGS

Honeggers' line of pre-built farm buildings are an extra profit plus. There's no additional investment on your part . . . and what a perfect tie-in for your livestock and poultry feed business.



Honeggers' modern feed mill near Fairbury, Illinois, features electronic controls for speed and accuracy, with "push-button" ingredient selection and all bulk handling throughout the plant for top efficiency and economy.

The 600 acre Honegger Research Farm, where practical feeding, management and disease control practices are developed and demonstrated. Dealers find that a tour of Honeggers' by customer prospects really helps sell them.

WRITE, PHONE OR WIRE COLLECT FOR COMPLETE DETAILS

HONEGGER Leghorns

HONEGGERS'

BIG H FEEDS

FEED & MILLING DIV., FAIRBURY, ILL. • BREEDER HATCHERY DIV., FORREST, ILL.

Nutrition Research Reports Presented At Poultry Science Assn. Meeting

EDITOR'S NOTE: Many research reports dealing with poultry nutrition were presented at the 45th annual meeting of the Poultry Science Assn. held Aug. 7-10 at North Carolina State College, Raleigh. The following article is the first of two articles reviewing some of the papers presented by scientists at the meeting. The reviews were prepared by nutritionists attending the meeting of some 800 scientists. This article deals with reports on research in the fields of management, protein, fats, minerals and vitamins. Next week's Feedstuffs will carry a second article, which will review various papers relating to unidentified factors, amino acids, antibiotics, antioxidants, hormones and disease control.

MANAGEMENT—Kinder and Yoes of the University of Missouri compared confined and range reared pullets. The test started when the birds were eight weeks of age and the birds were housed when 22 weeks of age. Both groups were fed by the free-choice system using a 20% protein growing mash and corn and oats. The feed requirement was identical for the two groups; they required 17.6 lb. of feed per pullet during the growing period. Of the pullets started at eight weeks, 93.3% from range-reared and 93.1% from confinement-reared were suitable for housing. The confined pullets were 5% heavier at housing, and sexual maturity was four days earlier than for the range-reared birds. Egg production from housing to Dec. 1 was 54% for each group, but egg production from sexual maturity favored the range-reared group. Livability in the range-reared pullets after housing was 95.1%, compared to 92.7% for the confinement-reared birds.

An analysis of data presented by D. W. Francis of New Mexico A&M College indicates there is a considerable variation among seven egg production strains of chickens which he tested for economic traits as caged layers. This suggests that feed men should be careful when recommending strains of chickens for caged laying operations. They may react differently in cages from the way they do on litter.

In many areas barley is in much greater supply than corn; consequently it is considerably cheaper on a pound basis. Due to this situation, G. H. Arscott of Oregon State College conducted tests to determine the amount of barley that will efficiently replace corn in high energy broiler rations.

Performance efficiency data show that barley may replace one half to three fourths of the ground corn in an all-mash ration with results comparable to an all-corn ration containing no added fat, provided such rations contain 3 and 6% fat, respectively. The addition of at least 3% fat to all-corn rations resulted in further improvement in performance efficiency. All-barley rations produced inferior results both from the standpoint of growth and feed efficiency in the presence or absence of added fat.

Pelleting rations containing all-corn, one half barley-one half corn or all-barley in the presence or absence of 3% added fat effected a marked improvement in performance efficiency. This improvement was particularly noticeable with lots fed all-barley pellets with 0 and 3% added fat and compared favorably to the all-corn mash with no added fat. Litter conditions appeared adversely affected, however, whenever barley replaced more than one half corn.

Nicarbazin Studies

Ott and associates from Merck Institute for Therapeutic Research reported that continuous feeding of 0.0125% or less Nicarbazin from day-old to maturity or to the end of 3 to 4 months of egg production showed no effect on sexual maturity, egg production or egg weight with New Hampshire chickens. Concentrations as high as 0.07% had no effect on fertility, or feather or body pigmentation. On the other hand, the normally brown eggs were markedly depigmented, and hatchability was greatly reduced when hens were fed 0.0125% Nicarbazin continuously. Shell pigmentation was detectably reduced when as little as 0.003% Nicarbazin was fed, while a slight decrease in hatchability was noted with as little as 0.001% Nicarbazin in the feed continuously. However, it was necessary to feed 0.07% Nicarbazin continuously to produce chalk white egg shells and to reduce hatchability to zero. The sudden introduction and subsequent continuous feeding of 0.008% or more Nicarbazin caused a lowering of egg production, suggesting that Nicarbazin was less well tolerated in this respect than when fed continuously since before maturity. Shell color returned to normal in three days, and hatchability and egg production became normal in 3 to 4 weeks after withdrawal of Nicarbazin from the feed. The severity of these effects was directly related to the Nicarbazin concentration in the feed.

In addition to some results similar to those reported above, Sherwood and coworkers at the Larro Research Farm found that periodic feeding of Nicarbazin at levels of 0.005% or

From Monsanto—another research discovery that can give you

new highs in broiler feed efficiency!

Now—the originator of MHA (methionine hydroxy analogue calcium) brings you the data that shows *why* MHA gives maximum feed efficiency to growers and maximum economy to feed formulators.

Radioactive tracer studies have revealed:

MHA is metabolized entirely in *the liver*, producing 100% usable metabolite *so all* the added supplement is available to the bird.

The studies show MHA acts in chickens and turkeys almost exactly like natural methionine. Birds absorb MHA more readily. They retain high amounts in the blood longer. More MHA goes into tissue protein. Birds feather better. And most important — they grow more meat per pound of feed.

You'll find MHA—as originated by Monsanto—the ideal answer for your new high-energy broiler feeds. MHA adds to all-around feed efficiency—helps birds make better use of proteins by balancing variations in the feedstuffs' natural methionine content.

MHA works in rations with all known feedstuffs, is compatible with antibiotics, vitamin B_{12}, and mineral supplements.

Join the alert formulators who are raising the feed efficiency of their broiler feeds with just 1-2 lbs. MHA per ton of feed. Write or call the originator of this better methionine supplement, Monsanto Chemical Company, Organic Chemicals Division, St. Louis 1, Missouri.

MHA: Registered Trade Name for Methionine Hydroxy Analogue Calcium

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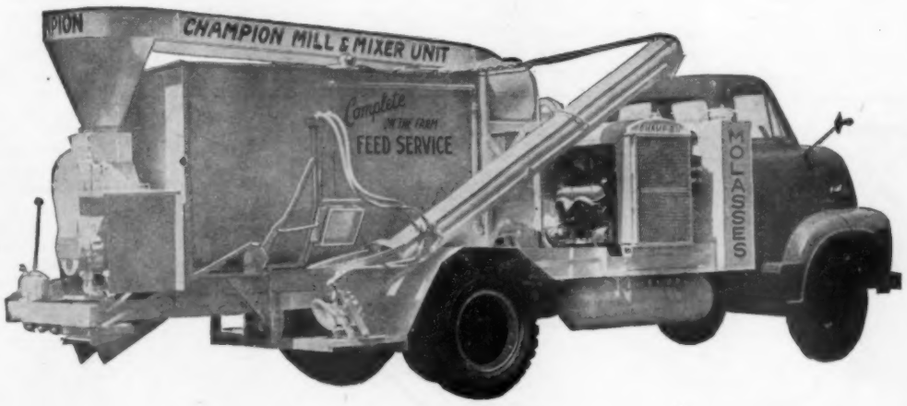

You'll increase your profit margin with a CHAMPION Mobile Mill and Mixer because modern engineering helps you raise tonnage volume and cut costs.

These powerful, all-hydraulic, 190 h.p. units outperform any other mobile grinding and mixing units and provide complete ON-THE-FARM feed processing service. With CHAMPION'S faster and finer grinding action you'll save time on each job and process more feed per day—at a lower cost per ton.

Regardless of the type or amount of ingredients, CHAMPION'S large, 110-cu. ft. capacity easily handles the toughest of mixes—wet or dry materials. Warm sweet molasses is quickly and thoroughly blended into fresh feeds while they are being ground. Any and all materials are mixed, blended and cross-blended, away from the ends and towards the center of the mixer. CHAMPION'S constantly uniform and accurate blending mixing action assures formula uniformity in batch after batch.

Modern engineering increases year-around ON-THE-FARM sales for CHAMPION owners. Long after CHAMPION equipment has re-paid for itself, you'll find it dependably on the job demonstrating the outstanding superiority of CHAMPION design and workmanship.

YOU CAN PAY MORE MONEY, BUT YOU CAN'T BUY BETTER FEED GRINDING AND MIXING EQUIPMENT

CHAMPION
OWNERS REPORT

The CHAMPION unit surpasses others in faster and finer grinding on same size screens.

Judson Peterson

JUD'S FEED STORE
Hardwich, Minnesota

CHAMPION Units are very compact, simple to operate, and easy to get around with.

C. A. Wanous

WANOUS FEED & SEED CO.
Owatonna, Minnesota

CHAMPION PORTABLE MILL CO.

2109 COMO AVENUE SOUTHEAST **MINNEAPOLIS 14, MINNESOTA**

more to laying hens resulted in a slight reduction in egg size. The shell texture did not seem to be affected by 0.005 and 0.007% levels in the laying feed. Baker and associates at Cornell, found that 0.006% or more of Nicarbazin in laying mashes impaired egg yolk quality (mottled yolks). This mottled yolk characteristic of eggs from hens fed Nicarbazin was confirmed by Polin and Porter of Merck Institute for Therapeutic Research. A direct relationship was found between degree of mottling and the per cent of Nicarbazin in the diet.

To avoid possible contamination of laying feeds with traces of Nicarbazin, feed manufacturers are advised to use caution and care to adequately clean mixing equipment after mixing a Nicarbazin-containing feed and before mixing a laying feed. It would be best to mix feeds other than laying feeds following the mixing of a starter or broiler feed containing Nicarbazin. Even though Nicarbazin may be hazardous in laying feeds, there is no evidence to indicate that it should not be fed to replacement stock prior to laying. It has been shown to be effective in the prevention of mortality and morbidity due to coccidiosis in chicks.

PROTEIN—Adams and Carlson of the South Dakota Agricultural Experiment Station conducted three tests to compare carp meal with a blend of fish meal and fish solubles, and meat scraps. The supplements were tested at a 5% level in broiler rations containing soybean oil meal as the main source of protein. The results indicate that carp meal can replace the fish blend when used at the 5% level in broiler feeds.

Tests at the Universities of Georgia and Maine indicate that poultry by-product meal and feather meal can replace at least part of the fish meal and soybean oil meal in chicken broiler and laying feeds. In addition, it appears that feather meal may contain an unidentified growth factor which appears to be the same as supplied by dried whey. Hydrolyzed poultry litter and hatchery waste also appear to have promise as ingredients in broiler feeds.

There apparently is considerable variation in the value of poultry by-product and feather meals produced by various processors. Care is suggested in purchasing these ingredients to make certain of a high quality product. These poultry by-products are generally used at low levels, particularly feather meal. Normally not more than 5% is used. High levels of feather meal may require methionine, lysine and tryptophan supplementation for optimum results.

Cottonseed Meal

Naber and Morgan of Clemson Agricultural College reported that data obtained from their tests indicated that degossypolized cottonseed meal, when used to replace one half of the soybean oil meal, supported just as good growth as when all soybean oil meal was used; however, the efficiency of feed utilization was not as good. Two per cent fat added to the ration containing the soy-cottonseed mixture overcame the poorer feed utilization making it equal to the soybean oil meal ration. These investigators concluded that the higher fiber content of the degossypolized cottonseed meal was responsible for impaired feeding efficiency of this meal.

If 2 lb. white grease, 17 lb. degossypolized cottonseed meal and 17 lb. soybean oil meal can replace 34 lb. soybean oil meal and 2 lb. corn in a broiler ration, it is noted that the degossypolized cottonseed meal would have to be purchased for about $8.40 ton less than soybean oil meal when white grease was 7¢ lb. and corn was 3¢ lb. to be of equivalent value. An overheated soybean oil meal is generally considered low in available lysine and cottonseed meal is also considered sub-optimum in lysine; therefore, it is important that a properly heated soybean meal is used with cottonseed meal for optimum performance.

In experiments conducted by Robel and associates at the University of Maryland, isocaloric rations (equal in energy content) containing 24, 18, 12 and 6% protein, in which protein was supplied by isolated soybean protein, DL-methionine and glycine, were employed to measure dietary protein retention by chicks at two, four and six weeks of age. Additional groups of chicks in the same experiments were fed the same diets modified to provide the same level of protein but only 75, 50, or 25% as much energy. It was found that carcass fat increased while protein and moisture decreased with each increase in energy intake. The retention of dietary protein was increased by increased caloric or energy intake. From the data obtained, the authors calculated the chick's average daily protein requirement for maintenance of nitrogen balance and for gain.

They also presented a formula for calculating daily protein requirements for chicks.

Protein Requirements

Blaylock of International Milling Co. reported on data obtained from tests conducted to determine the protein requirements of birds being grown for replacement stock. Two strains of Leghorns were used in his tests.

A graded series of protein levels at each four-week period from day of age to 20 weeks was used. In the first trial conducted at Colorado, the average weights of composite groups fed the various protein levels were: 18%, 3.6 lb.; 16%, 3.4 lb.; 14%, 3.5 lb.; 12%, 3.5 lb. The feed efficiency of the groups was not affected. Lowering the protein level to 12% at 16 weeks of age had no effect on the time required to produce the first

(Continued on page 82)

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Oregon Reports on Lamb Experiments

CORVALLIS, ORE. — Researchers at Oregon State College reported recently on studies involving phenothiazine and antibiotic for lambs.

The scientists making the study were G. E. Nelms and J. E. Oldfield, animal husbandmen, and Paul H. Allen, veterinarian.

Lambs given one phenothiazine drench for control of internal parasites often make better gains when fed an antibiotic in their daily ration, the researchers said. The antibiotic, he said, seems to help lambs overcome the stress imposed on them by the parasites. They theorized that the damage done by the parasites leaves the lambs more susceptible to attack by harmful bacteria, and feeding an antibiotic at a high enough level to control these bacteria helps the lambs make best gains from their feed.

Working with 12 groups of six worm-infested lambs each, the scientists checked the results with one phenothiazine drench alone, the drench plus daily feedings of ¼ gram of phenothiazine per pound of grain, and the daily feedings of phenothiazine alone. These three treatments were also combined with daily feedings of Aureomycin at rates of 10 and 25 milligrams per pound of grain.

Results showed that lambs drenched once with phenothiazine and fed the higher level of Aureomycin, showed increased gains over other treatments. And a combination of all three treatments—drench plus daily feedings of phenothiazine and 25 milligrams of Aureomycin—gave the greatest increase in gain, the researchers said.

They went on to say that further research is needed to determine the influence of antibiotic feeding when two phenothiazine drenches — the standard practice today—are given.

Eshelman Appointment

LANCASTER, PA. — Linwood P. Beltz has joined the firm of John W. Eshelman & Sons as assistant comptroller. Prior to joining Eshelman Mr. Beltz was employed by the Fred Whitaker Co., Philadelphia, where he served as an accountant for 11 years. He is a graduate of Temple University, Philadelphia. Comptroller for the Eshelman firm is R. G. Heagey who has been with the firm since March 1, 1911.

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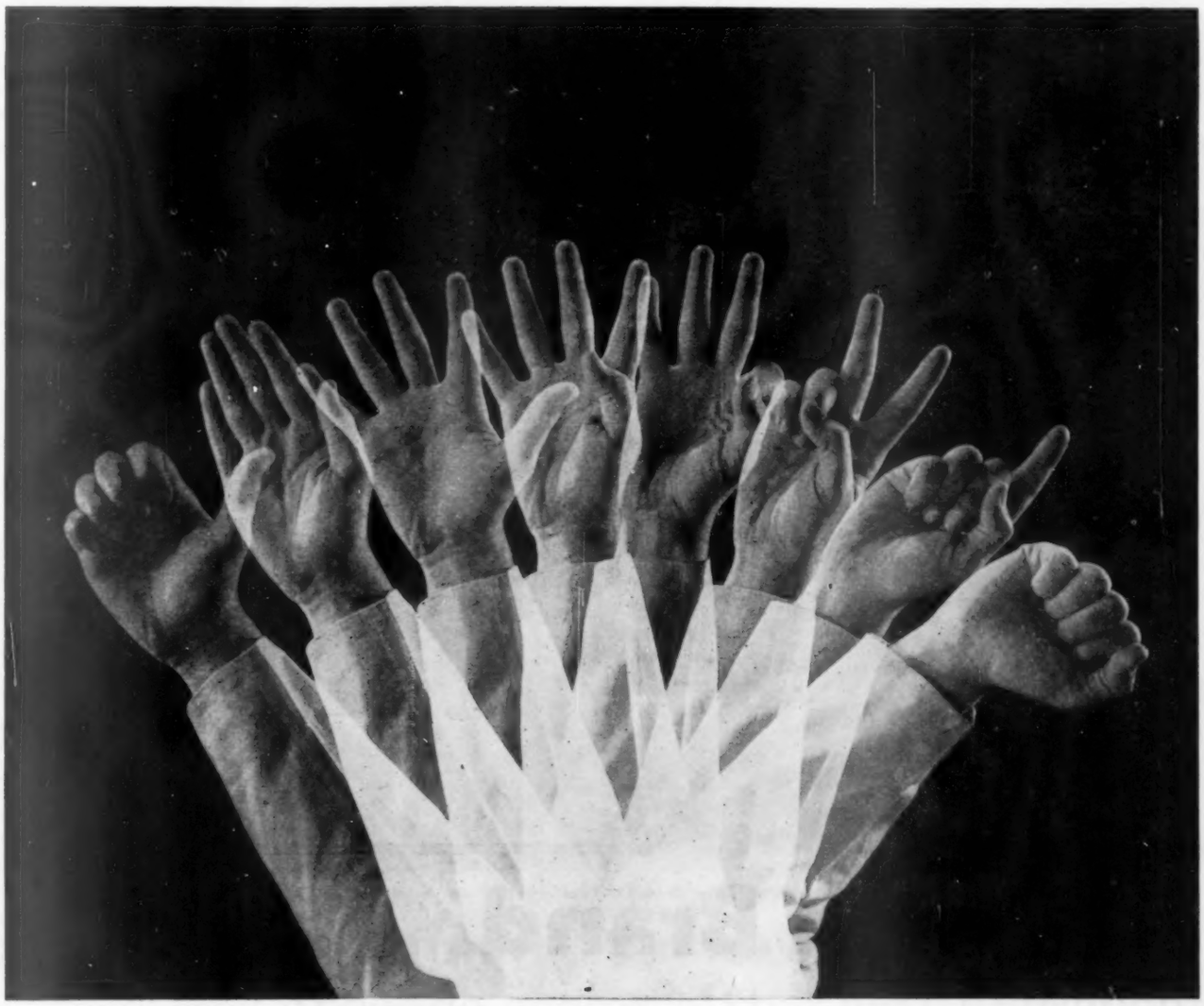

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There'll Be Some Changes Made

Trends in Methods, Size and Areas of Farm Production of Importance to the Feed Trade

By ROGER BERGLUND
Feedstuffs Editorial Staff

It has been said that the old adage, "Nothing is certain but death and taxes," should be revised to include an addition—"Nothing is so certain as change." This revision of the adage was suggested at the last American Feed Manufacturers Assn. convention by D. K. Webster, Jr., former AFMA board chairman.

Such an addition, it is becoming increasingly clear, is particularly appropriate when consideration is given to current and future trends in the poultry and feed industries and agriculture in general.

A good deal of attention has been focused on the trends toward more specialization and larger size units in poultry production and other phases of agriculture, but still further developments along these and other lines are indicated in methods, types and areas of production.

They are developments which, it may be noted, can have important implications in feed manufacture, distribution and service—and quality of service to poultrymen and other producers.

Some feed companies, particularly in midwestern states, have already felt the changes in areas and types of poultry production. Others have felt or look for effects on their business from greater specialization in hog production as well as egg production.

Some indication of what lies ahead for feed men, especially those serving poultry producers, was brought out in talks, discussions and conversations at the recent annual convention of the American Poultry & Hatchery Federation in Minneapolis. (Other stories from the convention appeared in the July 21 and July 28 issues of Feedstuffs.)

Indicated Trends

The meeting brought renewed attention to such trends as:

1. Larger and more specialized egg production units in midwestern as well as other areas.
2. More cage layer operations in northern as well as other areas.
3. Extensive financing of egg production.
4. More broiler production in northern and midwestern areas.
5. More emphasis on egg quality.
6. A possible further decline in numbers of midwestern farm flocks.
7. A general trend toward poultry production closer to markets.
8. More specialization and less diversification on midwestern farms.

For the feed industry, the significance of such developments lies in possible changes in feed production volume in different areas; changes in volumes of different types of feeds, which can affect production plants and methods; changes in distribution methods and service to feeders. And as changes in one area or type of operation develop, there are likely to be related changes in other areas and operations.

Some of the trends are of a long-term nature; some of the developments may come more quickly than anticipated. At any rate, they are trends and developments seen and foreseen by agricultural economists and feed and poultry industry authorities.

Great Plains Area

One of the highlights of the APHF convention was an interview-type panel discussion of "Poultrydom's Future in the Great Plains Area." Information and comments were developed through farm and poultry magazine and radio editors' questioning of four authorities—Dean McNeal, executive vice president, feed division, Pillsbury Mills, Inc., Minneapolis; Dr. Selmer Engene, agricultural economist, University of Minnesota; Paul Gray, P. G. Gray, Inc., egg and poultry buyer, Estherville, Iowa, and Dr. John C. Huttar, farm management division chief, Grange League Federation, Ithaca, N.Y.

While the general problems under discussion were those of the west north central states, the discussion also brought out views of developments in other areas. These comments, along with remarks in conversations, provided indications of some general developments in all animal agriculture.

How extensive are the changes which are coming? According to some persons, they will be very extensive. For example, one feed man at the convention predicted that broilers some day would outrank cheese as an income source in the dairy state of Wisconsin. One of the speakers foresaw financing of egg production becoming just about as extensive as financing of broilers.

Egg Surplus Area

The specific area considered in the panel discussion was the west north central region including the Dakotas, Minnesota, Iowa, Nebraska, Kansas and Missouri. As pointed out by Don Turnbull, APHF executive secretary,

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this is the only section of the country consistently producing more eggs than it can consume. However, as production has increased on a commercial scale in other areas, the distant market for midwestern eggs becomes narrower.

With egg production per layer increasing, there has been a decline in numbers of hens and pullets on U.S. farms, but the decline has been more pronounced.

This situation raises such questions as whether midwestern producers can hold their own, whether introduction of larger flocks and new methods, such as cage plants, can play an important role in the problem, whether the area can become important in broiler production.

Actually, while numbers of layers are down, egg production has held up in the west north central region, but it has risen in other areas, such as in the Southeast, California and other regions.

Better Quality Needed

In the past, midwestern eggs have been sold in the East largely on a price basis; midwestern eggs' quality reputation has not been too good. As a result, there has been a wide price spread between eastern and midwestern eggs, and commercial egg production has developed further in eastern sections at the expense of midwestern farm flock production.

With this situation in mind, a good deal of panel discussion emphasis was put on improving egg quality. Mr. Gray noted that in the past two or three years there has been a definite improvement, and egg grading laws are helping in the strides being made. Dr. Huttar noted that eastern eggs are getting the top market now, but midwestern egg quality has vastly improved, and some midwestern eggs are better than the eastern average.

Some eggs are being picked up in the midwest and shipped into New York and are being sold as "nearbys."

Feed prices are definitely lower in the grain-producing midwestern area, it was brought out, and this helps in the competitive situation. But, of course, that is not enough.

Egg production increases in southeastern and other areas have come in larger, commercial-scale flocks, and the question was raised whether a similar trend would help the midwestern situation.

Mr. McNeal said that the Midwest can close the competitive gap somewhat if poultry producers specialize more, do a better management job and obtain greater efficiency in producing higher quality eggs which will have a better reputation in consuming areas.

Dr. Huttar, noted the definite national trend toward larger, more efficient egg production units, and he said that there is a correlation between farm size and egg quality. In connection with the size and quality question, he pointed out that every extra cent a dozen in egg price is equivalent to a $3 per ton decrease in feed cost. As the Midwest gets into larger operations, he said, it can compete more successfully in distant markets, so the region can continue to ship some eggs to other areas.

The question of feed prices and feed transportation costs also came into the picture. One of the speakers indicated that it was cheaper to convert midwestern grains and protein into eggs and ship the eggs east than it was to transport the required amount of feed east and convert it into eggs there. This comparison was based on assumptions of 1¢ per pound to transport feed, 4½ lb. of feed to make a dozen eggs and 3¢ per dozen to transport eggs.

Another expert indicated, however, that not all feed ingredients need come from the Midwest. Also, it was pointed out, water transportation has reduced freight costs into some areas, and more grain is now being grown in regions nearer the coasts, tending to work against cross-country shipments of eggs.

One of the speakers said that as of now, in view of water transportation and other factors, it is cheaper to ship any feed requirements east and produce the eggs there. But, he added, as midwestern egg producers become stronger and more efficient, they will be able to compete more easily.

At any rate, the above points are

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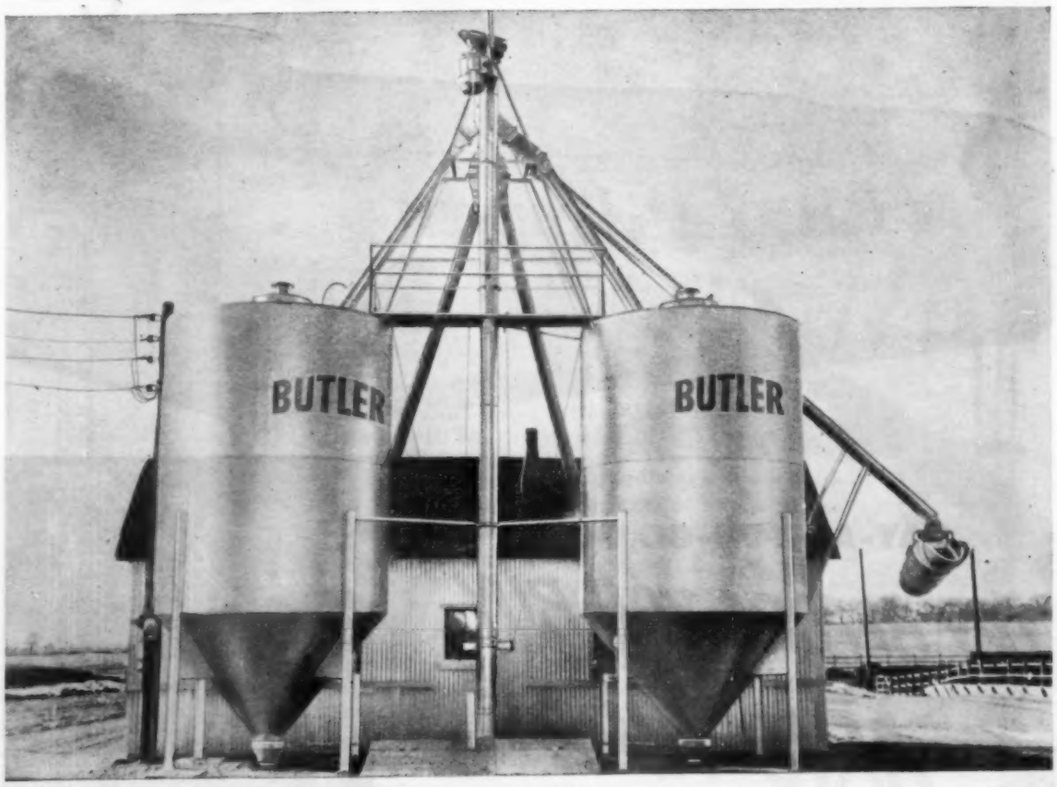

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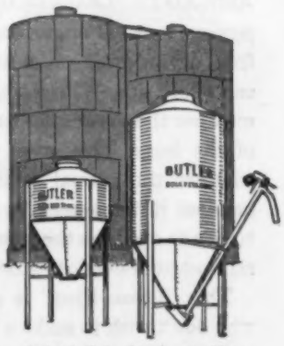

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not the only considerations in the outlook.

Asked whether midwestern farmers would "surrender their poultry and egg money," Dr. Engene said that they wouldn't "surrender" but that midwestern farm egg production would tend to go down because of better alternatives in other enterprises. He cited a Minnesota farm study in which $100 worth of feed brought $150 in eggs and $100 worth of feed also brought $150 back for hogs. However, he said, there is less labor involved in the hog enterprise and it is generally better to sell corn through hogs than through chickens.

If a farm is large enough and has some labor available, it will stay in the poultry business, too, Dr. Engene indicated, but there may be an overall decline in poultry and an increase in other enterprises.

In response to another question, Dr. Engene said that, assuming large flocks are an advantage, there may be a tendency for poultry operations to decline in the midwestern area. More of these large flocks, he said, will be located near consuming centers.

General Trend

Meanwhile, in connection with the question of midwestern egg production and marketing, there is an indication of a broad general trend which should be pointed out. It is a trend of significance to agriculture and the feed industry throughout the country.

Mr. McNeal indicated that the general trend will continue to be production of eggs and other products, too, near the population and consuming centers, with less cross-country shipment.

This trend, of course, is apparent in figures showing how poultry products output has increased in such areas as the East, Southeast and California while production of some products has held only steady or declined in relative importance in some midwestern states.

Presumably, assuming population relationships remain as they are, this trend will continue.

Mr. McNeal indicated that midwestern egg producers can probably compete in eastern markets if egg quality is good and becomes so recognized. But, he said, the over-all trend in midwestern egg enterprises may be downward unless there are population shifts.

He pointed out that it would be difficult for South Dakota egg producers, for example, to ship across good egg producers nearer eastern markets but that such producers might more reasonably aim for Chicago or other markets.

Factors such as water transportation and more grain production in southeastern and other regions also were pointed out.

At the same time, greater industrialization or other factors could mean relatively more population in midwestern and southern sections, and then some of the current and indicated trends might be changed somewhat.

The general trend toward production closer to markets also, as noted below, may bring important increases in broiler production closer to midwestern and northern cities.

More Specialization

Coinciding with this trend, there is the frequently mentioned trend toward specialization and larger units in agriculture, especially evident already in the poultry industry. This may bring particularly marked changes in the Midwest. Where many diversified midwestern farms once produced a "little of everything," farms in the future are expected to be considerably more specialized. They will so develop because of the need to become more efficient and competitive.

Mr. McNeal looks for many farms to have just two enterprises which can be combined well. For example, there will be farms with dairy cows and poultry (layers or broilers); farms with hogs and cattle; or hogs and corn for market; or other combinations. They will be large enough and efficient enough to operate two enterprises profitably.

Another feed man also pointed out the likelihood of dairy-broiler combinations, which combine well partly because both require constant presence of manpower on the farm.

Similarly, college and industry experts have been noting that hog production in the future is likely to become much more specialized, with larger, more efficient units making use of scientific advances in breeding, feeding and management to turn out better pork more economically and profitably.

The gradual trend toward larger, more efficient dairy farming operations also has been evident, and a good number of farmers may profitably combine dairy and poultry operations.

Other significant points brought out in program discussions and conversations at the APHF convention dealt with such developments as cage layers, financing of egg production and broiler production in midwestern and northern areas.

Midwestern Future

But, first, here is the way Don Turnbull summed up the discussion of the poultry future for the Great Plains or midwestern area:

First, the future of the poultry industry in this area depends on production of high quality eggs and poultry. In the past, this area has been noted more for the volume of its poultry products than its high quality. Great strides have been made in improving quality, but there is still a long way to go.

Second, there must be an incentive to produce this quality. Anyone who buys poultry products from producers must buy on quality and pay for quality.

Third, there must be better management of flocks, with eggs and poultry meat being produced as economically as possible.

It was concluded that there will undoubtedly be good-sized broiler farms near small cities or large towns where there are none now

(Continued on page 79)

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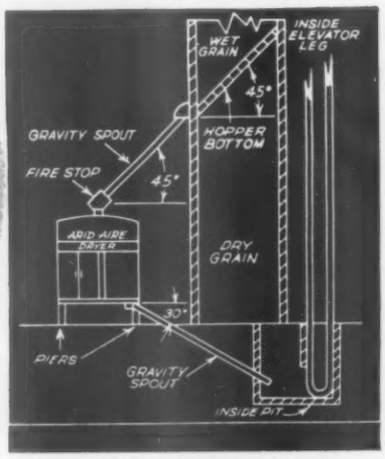

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10 Feed Technology Scholarship Winners Announced by K-State

MANHATTAN, KANSAS — Ten students who will major in feed technology at Kansas State College next year have been awarded $400 scholarships provided by firms in the feed industry, Max W. Milbourn, chairman of the college general scholarship committee, has announced.

Winners include Martyn L. Apley, Washington, and Ronald L. Chilcoat, Topeka, from the Ralston Purina Co., St. Louis; John D. Buser, Fairview, from Feeds Illustrated, Inc., Chicago; James H. Booth, Baldwin, from Allied Mills, Inc., Chicago; Robert L. Gardner, Louisburg, from Pillsbury Mills, Inc., Minneapolis; Robert J. Pickett, Nevada, Mo., from Staley Milling Co., North Kansas City, Mo.; Lee Roy Young, Clifton, from Jacobson Machine Works, Minneapolis; Richard L. Stamm, Washington, from the Pfizer Foundation, Brooklyn, N.Y.; Joseph C. Nothern, Jr., Salina, from Nutrena Mills, Inc., Minneapolis, and Donald Allan Kesinger, White Hall, Ill., from Archer-Daniels-Midland Co., Minneapolis.

K-State is the only school in the world with a four-year curriculum in feed technology, installed in 1951, and its pilot feed mill is a unique collection of facilities not duplicated anywhere in the world.

A new half-million dollar feed technology wing was dedicated on the Kansas State College campus Nov. 10, 1955. The wing was built and equipped with funds raised by members of the feed industry and allied trades. John A. Shellenberger heads the K-State department of flour and feed milling industries.

Number of Cattle and Calves on Canadian Farms at Record High

WINNIPEG — Number of cattle and calves on Canadian farms reached an all-time high total of 10,465,000 on June 1 this year, an increase of 2.2% from the previous top figure of 10,239,000 for 1955, the Dominion Bureau of Statistics reports. At the same time the number of horses continued to decline, falling to an estimated 851,500 head compared with 901,400 in 1955 and less than one quarter 1921's record total of 3,452,000 head.

There was little change in the number of sheep and lambs, estimated at 1,706,000 head compared to 1,722,000 a year ago.

Only Nova Scotia and New Brunswick indicated any decline in cattle numbers as compared with June last year. Net increases amounted to 1% in eastern Canada and 3.5% in the West.

Number of cows kept for milking purposes increased to 3,348,000 head from 3,312,300 a year earlier and the number kept for beef to 1,588,000 from 1,547,000. Yearling heifers kept for milk were fewer in number at 855,100 versus 886,500, but those intended for beef increased to 699,600 from 672,200. Steers increased to 1,086,800 from 982,100; calves to 2,652,000 from 2,607,000, and bulls to 235,000 from 231,900.

The decline in the number of horses was common to all provinces.

Turkey Short Course

STILLWATER, OKLA. — Oklahoma turkey producers are slated for a short review in turkey raising at Oklahoma A&M College Sept. 20-21. The short course will cover practically every phase of turkey management plus several additional features that will bring the turkey breeders up-to-date on new developments in the turkey industry, according to Dr. John W. West, head of the Oklahoma A&M poultry department. Complete information and reservations may be obtained from the Oklahoma A&M poultry department.

Robert Waite, Jr., to Be GFDNA Speaker

ST. LOUIS—Meeting the challenge of 1957 with "Better Merchandising on the Farm" will be the topic of Robert Waite, Jr., vice president of Dannen Mills, Inc., St. Joseph, Mo., when he addresses the 60th annual convention of the Grain & Feed Dealers National Assn. The meeting is scheduled for Sept. 9-11 in the Morrison Hotel, Chicago.

His talk will be the third in a series on meeting the challenge of 1957. Other speakers will be Ernest T. Baughman, assistant vice president of the Federal Reserve Bank of Chicago, and G. R. Berger of Sears, Roebuck & Co., Chicago.

In announcing the naming of Mr. Waite as the merchandising speaker, E. G. Cherbonnier, GFDNA feed advisor, said, "Dannen Mills has had a steady growth in areas similar to those represented by a large proportion of our membership. They have their own elevators who handle feed and are building successfully with independent dealers in other markets. Their business has been streamlined to meet the more difficult selling conditions of the last few years and Bob's experience should be of value to all retailers."

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Give Customers the Service They Want

By Al. P. Nelson

When Bill Franklin came into the Brooks Feed Mill one morning he saw a large dinner bell, the kind that some farmers and ranchers have in their yards, mounted on a square rust colored post. A large sign in red said: "Quick Service Department. We know that once in a while you can't wait. Maybe you've got to meet the wife, hubby or mother-in-law in 10 minutes. Or maybe you've got some other reason for fast, quick service. All right, then ring this bell and see how quick we step into action. We want to give good service—to all our customers."

Bill Franklin grinned, rubbed his one day growth of beard and then pulled the rope that hung along side the bell. It rang loudly. Several other customers who were being waited on by Smiley Johnson, Milt Peters and Butterball Barlow, turned around and grinned.

Then the door to the office opened and out came Rusty Hagen, the runty bookkeeper, and he really was walking fast. "Hello, Bill," he said, cheerfully. "What will you have?"

"What'll I have?" Bill Franklin answered. "Shucks, I forgot. I read the sign and pulled the cord. Real pretty sound, that ring. Bet you could hear it a half a forty away."

Rusty Hagen smiled thinly. "Yup, this is our new emergency service. It's Joe's idea. Anybody that has to have quick service or get an ulcer should come here. I'm supposed to take care of this department as Joe figures we won't get more than 10 or 20 quick service orders a day. Most fellows will wait."

Always Something New

"Huh," said Franklin, "Joe is allus tryin' something new. What do I want? I wanted somethin', but I can't think of it. I've wanted a lot of things in my life and never could get half of them. I wanted a curly blonde girl back in Kansas years ago. She kept puttin' me off, never would say yes. Then she marries another feller, so I settled for a brunette. But she made me a good wife, better'n I thought. Maybe I'm lucky I didn't get the blonde."

"I've heard that they get grey quickly," Rusty said. "Of course, I don't know, I'm not married."

"Well, don't be in a hurry, buddy," the farmer cautioned. "Think it over, unless you like to take orders all the time."

Rusty frowned. "I don't. I like to have things my own way."

Bill Franklin shook his head sadly. "Marriage ain't for you, Rusty. You talk too much. You have to be real quiet to be a husband."

"Then I'll stay single."

Bill Franklin chuckled. "Oh, I remember what I want, 10 bags of poultry mash and four bags of hog supplement. Have the boys load it up for me."

While Bill Franklin's order was being prepared, the farmer walked around inspecting merchandise, kidding with other farmers, exchanging exaggerated crop stories, etc. Finally he wound up in front of the big dinner bell. He pulled the rope once more. Again the peal of the bell rang through the store.

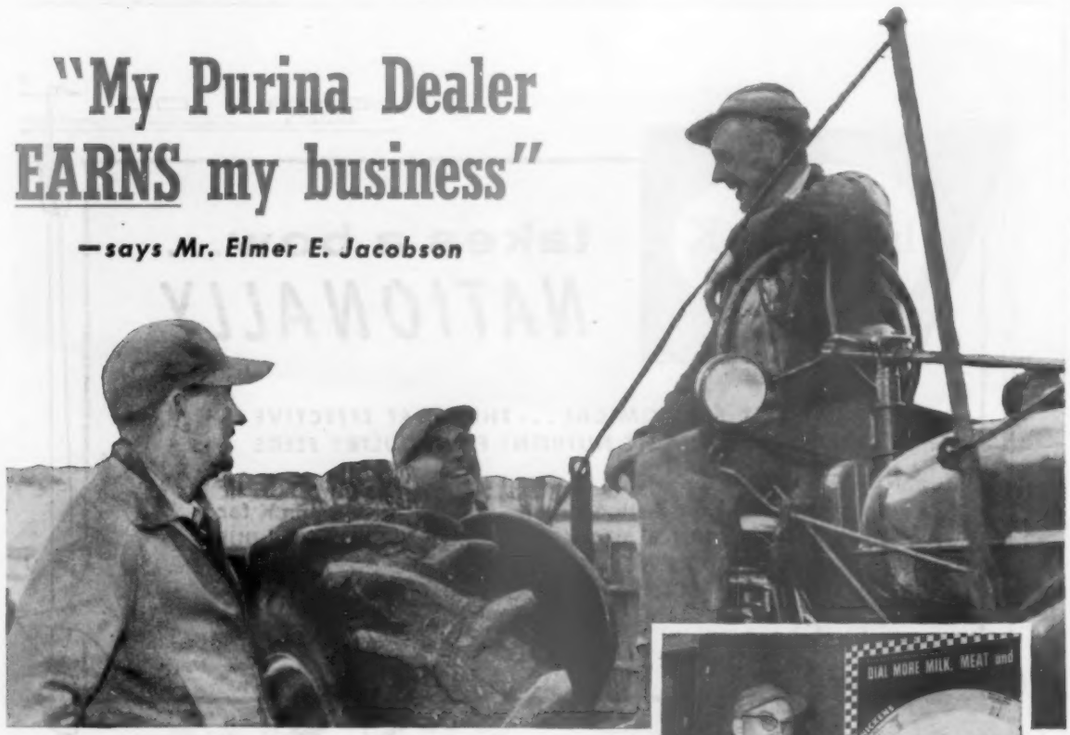
Once more the door to Joe's office opened quickly and Rusty Hagen hurried forth. "Oh, it's you," he said to Franklin. "Did you forget something?"

"No," said Bill Franklin, "but I wonder how much this dinner bell and post cost."

"It cost $39.50," Rusty said. "The sign must have dropped down. Oh,

"My Purina Dealer EARNS my business"

—says Mr. Elmer E. Jacobson



Field work in Stoughton, Wisconsin, is just as important as it is anywhere. But Mr. Elmer E. Jacobson (on tractor) takes time out to talk over problems with his Purina Dealer, Obert Asleson, and his outside salesman, Herman Arneson.

When a truck from the City Feed Mill in Stoughton, Wisconsin, heads out on RR #2, one of the places it's probably going to stop is the Elmer E. Jacobson farm. The driver's going to get a fine welcome, too, because, as Mr. Jacobson puts it: "I appreciate the help given to me by the City Feed Mill. By helping me with a Purina program for my dairy cattle, I've seen cow condition improve and milk production increase.

"Not only are they of help with livestock, but poultry, too! When I ask, they are always willing to help during busy seasons by delivery and pick up of my grist and Purina needs.

"Their advice is always welcomed when I need help with a sanitation problem, or need some tips on management. My Purina Dealer is always a big help to me!"

Real Service to the Farmer

"I'd hate to tackle the feed business today, if I didn't have the Purina Franchise!"

That's what Mr. Obert Asleson, owner of the City Feed Mill in Stoughton, Wisconsin, thinks about Purina! "Purina's proven program of profits—for the dealer and for the feeder—is something no other competitor offers.

"Without the combination of those two, it's pretty hard for a feed dealer to survive the competition today! And having been associated with Purina for 21 years, I know what I'm talking about!

"We are able—because of Purina's know-how and training—to offer services no other feed concern offers. And we do many of these services without charge. That's something that has made us many customers, and given us a lot more prestige among the folks around our trade area.

"But without the help of Purina, I don't believe we'd have the position we have today!"

★ ★ ★ ★

If you'd like to know more about the Purina Franchise, and what it can mean to you, write:

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Marshall Rutherford

PROMOTED — Promotion of Marshall Rutherford of Burrus Feed Mills to the position of a district sales manager has been announced by the Ft. Worth firm. Mr. Rutherford, who succeeds Norman Duke—recently promoted to the post of livestock specialist in the Burrus organization—is a graduate of Texas A&M College. His background includes a period as a trainee with another major milling firm. Later he managed a feed store in Woodville, Texas, and still later was employed by Kazmeier-Sherrill at Bryan, Texas, as a sales representative. As district manager for Burrus, Mr. Rutherford will supervise sales activity in ten territories, assisting territory managers and Texo feed dealers with sales and distribution problems. He lives in Coleman, Texas.

here it is." He handed it to Franklin. "Every farmer should have a musical dinner bell like this."

"Oh, he should, eh?" Franklin said gruffly. "Trouble is I like the darn sound, too. I guess I'll buy one. Do I take this one?"

"No," said Rusty, "we've got some out in the warehouse by the loading door. I'll have Butterball put one on your truck. Cash or credit?"

"Cash, man," roared Franklin, winking at another farmer. "Know why I always have money in my purse, Rusty?"

The bookkeeper looked up from the sales invoice he was writing. "No, why?"

"Because I keep my real pocketbook outside somewhere, and I ain't telling where," grinned Franklin. "The pocketbook I have in my pants only has three to four dollars in it at a time. Then if the wife goes through my pockets—and she's no angel—she never finds much. I reckon she thinks I'm the poorest farmer in the whole county."

The farmers all laughed at that. "She'll wonder where I got the money to buy the fancy dinner bell," Franklin said. "But I like the dern thing. I'll tell her I won one of Joe Brooks' contests. She'll never get wise, for Joe's always got a contest or somethin' stirrin'. Man, I just can't wait till I get that dinner bell rigged up. My neighbors sure will get jealous when they hear it."

When Joe Brooks got back to the office late that afternoon, Rusty said wearily: "Joe, we are running low on dinner bells. We've got only three left out of that two dozen."

"Good," Joe declared. "Let's order another two dozen. I figured that stunt would sell the bells. Every farmer is a boy at heart. They all like to ring bells, for one reason or another."

Rusty Hagen sighed. "That quick service sign certainly keeps me runnin'," he said. "If you're ordering more bells, maybe I'd better move my desk out into the salesroom. I could get there faster when the bell rings, and not get so tired."

"Wonderful," Joe laughed. "That's efficiency. You'll save on steps. Not only do we sell dinner bells, Rusty, but we show farmers we are ready to cooperate with them along modern lines, giving them fast, streamlined service when they want it. We always aim to please."

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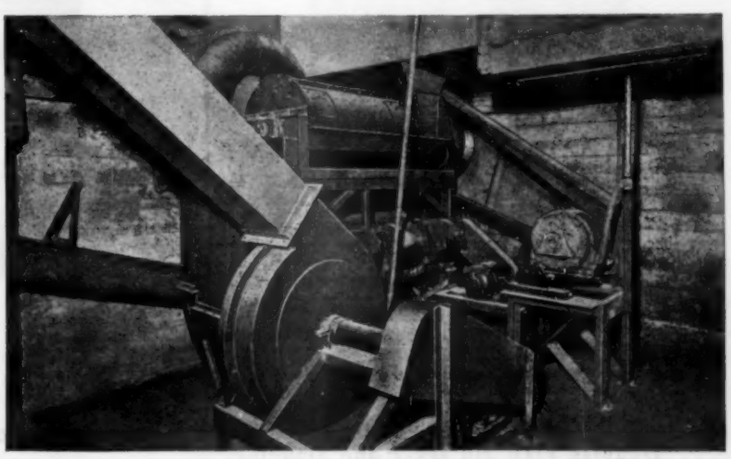
*Patent Applied For

View at right shows one of the two simple, proven Triumph No. 1200 Corn Shelling systems at the world famous Anderson Truck Terminal, Maumee, Ohio. These compact systems shell the corn; remove and blow away husks, silk and small trash particles with the cobs; discharge up to 1200 bushels of air cleaned shelled corn per hour. Six more Triumph No. 1200 Corn Shellers were installed by Anderson during 1955.



Listed below are just a few of the plants that already have installed two or more

TRIUMPH No. 1200 CORN SHELLING Systems

Saginaw Grain Co.....Saginaw, Mich.
Anderson Truck Terminal.....Maumee, Ohio
Wolfe Grain Co.....Shipshewana, Ind.
Cooperative Mills, Inc.....Seaford, Del.
Farmers Grain & Coal Co.....Mason City, Ill.
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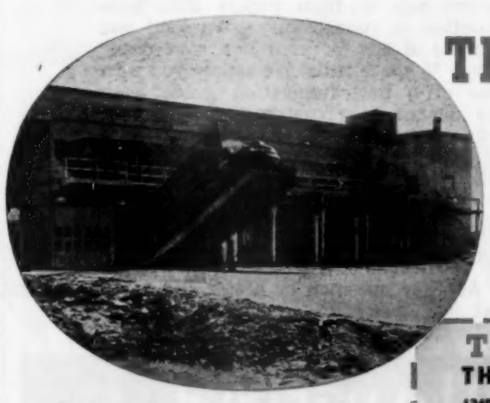

Semi-trailer Loaded with 22 Tons of Ear Corn is Dumped and the Corn Shelled and Air Cleaned in 30 Minutes with a

TRIUMPH No. 1200 CORN SHELLING SYSTEM

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National Distillers Firm Adopts Aid to Education Program

NEW YORK — National Distillers Products Corp. and subsidiaries, including its U. S. I. Chemicals Co. division and 60%-owned National Petro-Chemicals Corp., has inaugurated a comprehensive program of financial aid to education, John E. Bierwirth, president, has announced.

The program includes direct assistance to institutions ranging from preparatory to graduate schools through a plan to match employee contributions for educational purposes, 10 four-year National Merit Scholarships on the college level, a donation equivalent to two scholarships to the National Fund for Medical Education which aids 82 universities, and a limited number of graduate fellowships.

National Distillers' method of matching employee contributions to educational institutions is believed to be unique in the field of corporate giving. Any contribution of an employee to a U.S. secondary or preparatory school, college or university will be matched by the company up to a limit of $1,000 for any one employee.

National Distillers' scholarship program will be implemented through the National Merit Scholarship Corp., an independent agency which examines and selects high school seniors best qualified to benefit from a college education, and provides financial aid through scholarships purchased by corporations and individuals.

Certain of the scholarships will be designated for the field of chemical engineering. Others will be designated for educational fields unrelated to the company's activities where a shortage of graduates exists.

National Distillers' aid to medical education will take the form of a contribution to the National Fund for Medical Education. This organization in turn aids some 82 universities. Corporate contributions to this fund are matched by the Ford Foundation.

In addition, National Distillers will sponsor a number of advanced research fellowships primarily in the field of chemical engineering and directly related to the company's chemical operations.

The new aid to education program is in addition to National Distillers' present system of educational contributions in its plant communities and payment by the company of 50% of the tuition of employees who attend courses helpful to their work.

Colorado Dividend

DENVER—Robert M. Pease, president of Colorado Milling & Elevator Co., announced that at a meeting held Aug. 3, a quarterly dividend of 35¢ per share was declared on the company's outstanding common stock. The dividend is payable Sept. 1, 1956, to stockholders of record at the close of business Aug. 15.

Don C. Hawkins, Jr.

APPOINTED—Don C. Hawkins, Jr., has been named sales representative for the New York sales office of the Archer - Daniels - Midland Co., it has been announced by Paul McClay, assistant vice president in charge of sales for the company's New York office and six Atlantic seaboard states. Mr. Hawkins will represent ADM's soybean and linseed oil meals, soy specialty proteins and industrial cereal products in the eastern sales territory. He has been with ADM since 1948, working at the firm's Minneapolis office. Mr. Hawkins is a graduate of the University of Minnesota. He will live in Westfield, N.J.

California Animal Industry Conference To Be Split 4 Ways

SACRAMENTO, CAL.—Four specialized section meetings on beef, dairy, sheep and turkeys will feature the 1956 California Animal Industry Conference to be held Oct. 15-16 at Memorial Auditorium, Fresno, Cal., according to general chairman Emery A. Johnson.

The meetings will run concurrently and industry members have been urged to send sufficient representatives to enable coverage of all subjects in which they are interested.

Out of state speakers, including Dr. E. R. Halbrook, Montana State College; Dr. M. L. Scott, Cornell University, and Howard O. Sturgis, National Fisheries Institute, Washington, D.C., will join with specialists from California in providing a complete run-down on livestock and poultry health, management and nutrition.

J. Earl Coke, president, Bank of America, and former U.S. assistant secretary of agriculture, will deliver the banquet address Oct. 15.

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Tetrakil Grain Fumigant

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When you sell your farm customers Douglas FARM BIN SPRAY and Douglas TETRAKIL®, you *know* they're going to get a kill. Chances are that you have proved the effectiveness of Douglas residual sprays and fumigants yourself.

Customer satisfaction is just one reason why you're better off when you recommend these two top quality Douglas products. You're sure that farm-stored grain protected with FARM BIN SPRAY and TETRAKIL will be insect-free when it hits your elevator. And, you make a clear 30% profit when you sell these two products.

And we help you sell them!

We're pre-selling your customers with frequent ads in farm papers that have circulation in your county. We send you free mats of ads for your local newspaper *and* pay ½ space costs. We supply you with copies of a new fumigation guide book every one of your customers is going to want to own and keep . . . *plus* a wall poster that tells and sells. Display racks are also available.

In short, everything you need to keep profits on FARM BIN SPRAY and TETRAKIL rolling in.

Ask our salesman or better still write direct to us *now!*

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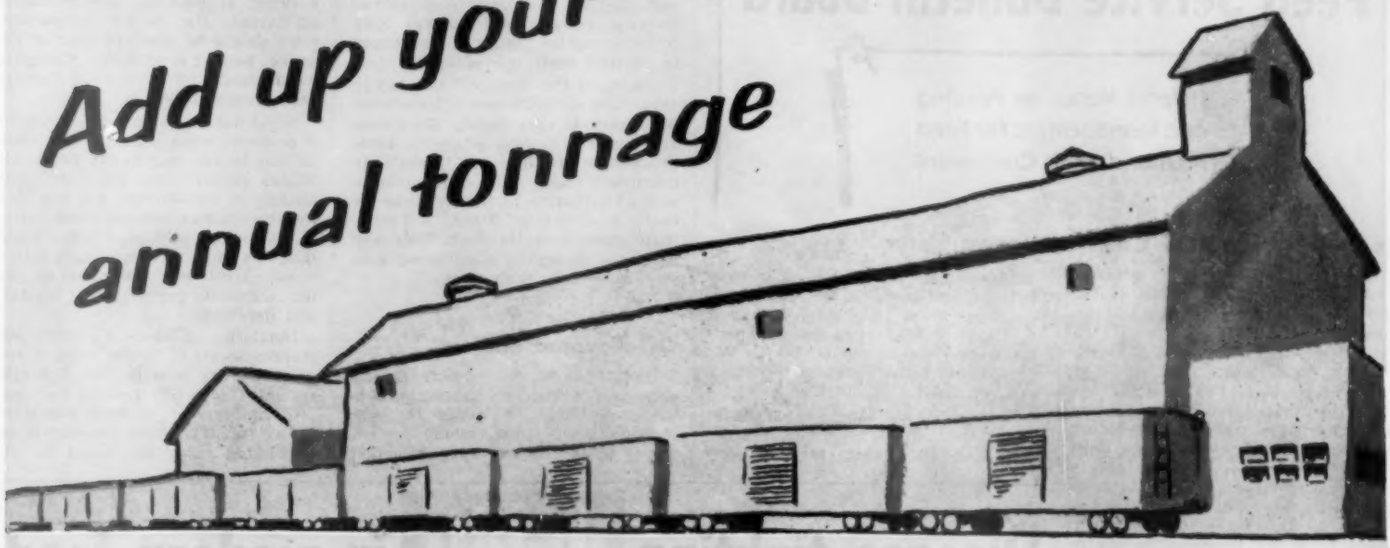

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Over 2,000 feed mills are saving money by using Soft Phosphate. You can do it too. Figure your last year's tonnage. Can you use that extra profit on every ton you made? Write now for data and name of your nearest agent.

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Keeping Cage Hens Cool

Loose droppings are a seasonal problem among caged hens in hot weather. Here are some tips for producers offered by the Ralston Purina Co. to help alleviate this condition:

Keep birds shaded at all times; use aluminum, or paint roofs with white paint to reduce inside temperature of house. Limit housing to one bird per cage and open house to obtain maximum ventilation. Provide cool, continuous flow of drinking water and control depth to one quarter inch. Apply litter on droppings to aid in drying and building of cones.

Clean and disinfect troughs two or three times a week. Use a cage droppings spray and fly bait to control adult flies and maggots. Install water spraying equipment on roof for cooling when temperature rises to 90° or above.

◆

Screwworm Infestation

Untreated open wounds on livestock this time of the year may lead to fatal infestations of screwworms, says Dr. Earle Raun, extension entomologist at Iowa State College.

Dr. Raun explains that screwworms are the maggot stage of a red-headed fly which lays its eggs on the edges of fresh wounds on livestock during the summer months. As the eggs hatch, the small maggots move directly into open wounds and feed on living flesh.

Getting such jobs as docking, castrating or dehorning out of the way early allows these wounds to heal before fly season. If such operations are delayed until fly season, the open wounds should be treated with a medicated smear every three to seven days until healed. A druggist or veterinarian can suggest one of several available smears that will control screwworms.

Dr. Raun adds that the navels of livestock born during the fly season should be treated with an approved smear to prevent screwworm infestation.

It's also a good idea, he says, to frequently check livestock during the fly season for wire cuts or other open wounds. Early treatment with a recommended smear will kill infested maggots and also promote faster healing. Again, the smear should be applied every three to seven days until the wounds are healed.

Useless Males

Unless eggs are to be used for hatching purposes, male birds will do more harm than good in those flocks where the eggs will be used for human consumption, says B. W. Moore, associate extension poultryman at West Virginia University.

Fertile eggs deteriorate much faster than eggs from flocks that do not have the males present. Mr. Moore points out that it is to the best interest of all market egg producers, both large and small, to make a constant effort to improve egg quality. One egg in a carton showing embryo development may cause an entire family of consumers to restrict their use of eggs.

"Much of the trouble," Mr. Moore says, "lies with the small flockowner who markets eggs during the spring and summer months when his birds produce more than his family can consume. These folks will make a real contribution to the 'crusade for better quality eggs' if they will eliminate males from the flock. They also will save money by eliminating nonproducers from their flocks."

◆

Off-Flavored Milk

Dairymen can save many dollars each year when cows are on pasture by eliminating off-flavors in milk through good management, according to C. W. Nibler, dairy specialist at the University of Nebraska.

Many times these off-flavors can be prevented by feeding the cows after or at least five hours before milking. If pastures are producing off-flavors, Mr. Nibler warns that cows should be removed four or five hours before milking. Offending weed should be eliminated through field practices, he says.

Weed flavors become much more of a problem when pastures are short as may be the case in dry years, Mr. Nibler points out. The continuous feeding of concentrate and hay during the summer reduces weed flavors in milk under such conditions. Weeds that can cause flavors include bitterweed, carrotweed, wild onion or garlic, ragweed, peppergrass, mustard and dandelion.

Inhalation of odors of volatile substances seems to be the main source of off-flavors in milk, the Nebraska specialist says. By feeding the cows after milking or at least five hours before milking, these compounds are eliminated from the blood by the

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Missouri community miller reports investment in modern dust-free grain roller returned so quickly he never missed the money.

You, too, can jump in and make a killing now! . . . while others sit idly by with outmoded "grinders" and bellyache about conditions.

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Disease-fighting nf-180 in modern feeds protects your birds from poult to market

New "mighty-but-mild" nf-180 starves disease germs to death while it strengthens your birds

Even with the best of management, dangerous stress periods can break down a turkey flock's resistance to disease if birds are not protected. Vaccination, chilling, overheating, overcrowding, moving birds from house to range—all can trigger trouble.

That's when good grower management needs a teammate —"internal management" with disease fighting nf-180 (furazolidone). It's the new way to supplement your own flock management and sanitation practices through positive *internal* disease protection.

Modern turkey feeds containing nf-180 pack more disease-fighting power than ever . . . provide protection you can get in no other way. That's why you can look for faster, more profitable gains than ever when your turkeys get the life-saving benefits of nf-180.

College tests and extensive turkey grower experiences have shown nf-180 can appreciably step up growth rate . . . improve feed conversion . . . and effectively control costly diseases.

Fights Disease in New Way

nf-180 goes right to work in the intestinal tract *and* in the blood stream to fight disease in a new way. It forces disease germs to starve themselves to death . . . interrupts their metabolism and throws them off feed. And it does this job without building up in the tissues to cause marketing delays.

Safe for Continued Use

nf-180, like all effective drugs, must be utilized by the bird's tissues to do its job — and a good drug leaves no unwanted tissue residue. That's why nf-180 is superior, it is used up as it works . . . there is no waste or undesirable leftover. It's safe to use throughout the entire life of your flock . . . with birds of all ages.

Extra life-saving protection...

In addition to specific diseases listed at right, growers confirm that nf-180 will prevent most occurrences of CRD (air sac), non-specific enteritis (blue comb, mud fever) and ulcerative enteritis (quail disease) plus harmful secondary infections.

Emergency diagnosis and treatment

Treat the first five — keep the rest alive

Here's new protection . . . new emergency first aid for ailing turkeys. Its the new nf-180 tablets, now prepared in the handy, pocket-sized containers.

Use nf-180 tablets at the first sign of trouble. Get the jump on disease before it strikes the whole flock.

Because nf-180 is effective against so many diseases, treating the first 4 or 5 sick birds will give you a quick answer. When birds respond, use nf-180 in a medicated feed to clean up most of your flock troubles. By isolating and treating the first few sick birds immediately, you give your whole flock better protection.

See your local feed dealer today. Get a supply of nf-180 tablets. Carry this pocket-sized dispensary in your hip pocket and be prepared for trouble before it starts. Many turkey raisers have learned that nf-180 tablets offer the handiest way yet to get the jump on disease

lungs or kidneys. As the compounds are reduced in the blood through elimination, the off-flavor producing substances in the milk pass back from the milk to the blood until the milk finally is free of the odors, he states.

◆

Market Hog Weights

Selling hogs at correct weights of around 200 lb. is the easiest and surest way to raise the market, reports Richard Hollandbeck, Purdue University extension swine specialist.

While the temptation for pork producers to feed hogs to heavy weights is ever present, it won't pay off in profits over a long-run period, Mr. Hollandbeck says.

Feeding hogs to heavy weights is an expensive practice. Heavy hogs eat more feed per pound of gain. And, what's more important, the end product from these heavy hogs is refused by consumers. The oversized cuts are usually too fat and end up on a bargain counter.

Market prices serve as an expression of supply and demand—not just the total of each, but the kind of supply and the kind of demand. Mr. Hollandbeck says there's a world of difference between three 200 lb. meat hogs and two 300 lb. fat hogs. The tonnage is the same, but the kind of supply is in sharp contrast.

The discount on a 300 lb. hog is three times as great as it seems, the swine specialist revealed. He said the discount applies to the original 200 lb. as well as the extra 100 lb. While the number of farmers who feed hogs to 300 lb. are few, the 250 lb. feeders are far too numerous.

◆

Sloping Barn Saves Work

A hillside is being used to good advantage by Bernard Dunn, Santa Clara County, Cal., cattleman. Mr. Dunn has erected a sloping barn at the base of the hill and is utilizing gravity to help him feed his beef cattle.

The floor has a 37° slope and is covered with aluminum so that the hay can slide freely across the floor. Chopped hay is blown into the barn.

The hay falls through 2-ft. openings at the base of the barn into the mangers. The animals feed from the mangers while standing on a concrete area covered with a roof to protect them from the heat.

A series of chains extending from the mangers about half way up the sloping floor are used to loosen stoppages. A shake of the chains and the hay flows freely again.

◆

Looks Related to Performance

The relationship between visual appraisal and feedlot performance of bull calves was the subject of a two-year study done recently by Dr. Doyle Chambers, Oklahoma A&M College beef cattle researcher.

He studied the feedlot performance of 74 bull calves and then compared their performance with the way they looked at the end of the feeding test.

The feeding test ran 154 days. At the end of the test the average daily gain of each calf was calculated. Also at the end of the feeding test an experienced judge appraised each calf on the basis of his looks alone.

The appraiser did not have access to the feeding records of the calves; however, when he selected the 37 top bulls out of 74, he automatically selected 26 of the calves that were among the top half for rate of gain. Therefore, the bulls which were best for type and conformation also made the best gains in the feedlot.

Dr. Chambers has also shown that the "best doing" bulls in the feedlot also produced the "best doing" calves.

Francis Lentz

JOINS BROKERAGE — Francis Lentz recently became affiliated with Harris-Crane, Inc., Charlotte, N.C., grain and feed brokerage firm. Mr. Lentz has spent most of his life in Durham, N.C. Although he has not been connected with the feed business, Mr. Lentz has had 10 years of sales experience. Harris-Crane is connected by direct wire with D.C.A., Inc., in Chicago, Sparks-Waters-Farnen in St. Louis, the T.D.F. Co. in Buffalo and the Charles J. Koelsch Grain Co. in Boston.

◆

Management Important

Inadequate feeding, watering, roosting and nesting space can lower the performance of today's layers below that bred into the birds and built into the rations, according to D. J. Bray, poultry extension specialist at the University of Illinois.

Mr. Bray says laying-house equipment should measure up to these standards. Each 100 birds should have:

1. 30 to 40 ft. of feeding space or three to four hanging feeders.
2. One watering trough or two pans.
3. 800 to 1,000 running inches of roosting space, with at least 13 in. between perches.
4. 20 to 25 nesting compartments or 20 sq. ft. of community nest.
5. One wall or hanging hopper full of shell and grit.

How to feed for life-saving results

	Level of nf-180	FEEDING INSTRUCTIONS
FIRST FOUR WEEKS	2 lbs. per Ton (0.011% Furazolidone)	Prevent costly losses from Blackhead, Hexamitiasis, Typhoid, Paratyphoid, Pullorum and Synovitis by feeding a turkey starter containing 2 lbs. of nf-180 per ton for the first 4 weeks or until each poult has consumed 4 lbs. of feed. This ration will also materially help prevent losses from diseases such as CRD (Air Sac), Non-Specific Enteritis (Mud Fever, Blue Comb), and Ulcerative Enteritis (Quail Disease). In addition to preventing disease, a turkey starter medicated with nf-180 gets poults off to a fast start . . . promotes rapid early growth and development.
FIFTH WEEK TO MATURITY	2 lbs. per Ton (0.011% Furazolidone).	Continue feeding 2 lbs. of nf-180 per ton for the prevention of all the diseases listed above.
	1 lb. per Ton (0.0055% Furazolidone)	On premises where Blackhead and Hexamitiasis have not been a problem in the past, nf-180 may be lowered to the 1 lb. per ton level. This level will prevent the occurrence of Salmonella diseases (Typhoid, Paratyphoid, Pullorum), and aid in the prevention of Synovitis, CRD (Air Sac), Non-Specific Enteritis (Mud Fever, Blue Comb), and Ulcerative Enteritis (Quail Disease).
TREATING DISEASES WITH nf-180	2 lbs. per Ton (0.011% Furazolidone)	Treat outbreaks of Hexamitiasis or Salmonella disease by feeding a ration containing 2 lbs. of nf-180 per ton of feed for at least 2 weeks. This level is also very useful for reducing morbidity and for maintaining feed consumption, growth and livability in the presence of diseases such as CRD, Mud Fever and Ulcerative Enteritis. Following the treatment period, 1 lb. of nf-180 may be fed to prevent recurrence of these diseases.
	3 lbs. per Ton (0.0165% Furazolidone)	Treat outbreaks of Blackhead with a ration containing 3 lbs. of nf-180 per ton, for at least 1 week. Follow with a ration medicated with 2 lbs. of nf-180 per ton for 2 weeks. This ration may be continued throughout the danger period to prevent all the diseases listed under two pound level (See First Four Weeks).
AS A CONDITIONER IN TIME OF STRESS	2 lbs. per Ton (0.011% Furazolidone)	During any period of stress (vaccination, environmental change, etc.) feed a ration containing 2 lbs. of nf-180 for 2 to 5 days. A ration medicated with nf-180 helps keep birds on full feed and fights off many secondary bacterial invaders that can become problems during stress periods.

nf-180 appears as Furazolidone on the feed tag

nf-180

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Specialists in Feed Medication

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Technical Agricultural Products With Controlled Specifications

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Formulation Chemistry Of Micro-Ingredients In Feed Supplements

By Robert C. Wornick
Chas. Pfizer & Co., Inc.

EDITOR'S NOTE: Extreme care is required in developing an acceptable feed supplement for use by the feed industry. This fact is brought sharply into focus in the accompanying article which examines many of the dozens of factors which must be considered in the formulation of a supplement containing an antibiotic or other micro-ingredient. Among other items, Mr. Wornick outlines the nature of some of the active ingredients that can go into a supplement, cites the factors to consider in selecting a diluent and discusses quality control aspects in the paper.

Whenever an antibiotic, vitamin, hormone or unidentified growth factor has been proven safe, effective and economical for use in animal feeding, the next step is its formulation into an acceptable animal feed supplement. This is necessary since very few such products may be conveniently used in pure undiluted form by the feed manufacturer.

The formulation problem may be imposing if one considers the endless variety of feed products, manufacturing processes and use conditions which the active ingredient must withstand. A brief summary follows on many of the factors which must be considered in the formulation of an acceptable feed supplement.

NATURE OF ACTIVE INGREDIENTS

Dry vs. Liquid Form—Although a few feed additives are in use in liquid form by the feed industry (e.g. animal fat, fish oil), the general preference is for dry products. If the active ingredient intended for feed supplement use is normally a liquid, such as choline chloride, it must be absorbed into a suitable carrier to yield a dry stable product.

In contrast is vitamin A. Although the pure vitamin is a crystalline solid, it is so sensitive to oxidation that it cannot be handled without rapid decomposition. Partial stabilization can be achieved by dissolving in purified vegetable oils containing suitable antioxidants and sequestering agents. Thus a dry product is rendered more stable by use in liquid form. However, optimum stability is best achieved through special processing in which tiny particles are thoroughly embedded in a solid protective matrix, such as gelatine, to yield a dry stable product (1).

Chemical Form — The chemical form of a micro-ingredient also is a factor in its stability. In the case of vitamin A, the free alcohol form is subject to destruction by oxidation. The palmitate ester has been found highly resistant to destruction in high moisture feeds, pelleted feeds and mineral feeds.

Penicillin Stability

Penicillin is an example of a sensitive antibiotic in common use today for poultry growth stimulation. Different forms of penicillin differ markedly in stability in feed (2). Stability tests indicate that, while the sodium and potassium salts are unstable, the procaine and diamine salts are satisfactory.

Oxytetracycline (Terramycin) is an antibiotic of inherently greater stability (3) both during processing (4) in aqueous solutions, and in pure dry form (5). Tests showed however that a quaternary ammonium complex of Terramycin is more stable in feeds than the hydrochloride, although the latter is satisfactory for use in pharmaceuticals.

These examples emphasize the difficulty in predicting antibiotic stability in feeds from data obtained by unrelated test methods. This is particularly true when use is contemplated in feeds which are to be pelleted, crumbled or cubed.

Physical Form — Most feed additives are effective at very low concentrations. Thus, only a few grams of antibiotic per ton of finished feed provide a substantial growth stimulus. To insure uniform distribution, the particle size of the active ingredient must approximate that of the carrier. If the additive is considerably coarser or finer than the average particle size of the diluents, segregation may occur during manufacture and shipment.

When one considers the minute percentages in which antibiotics are added, it is apparent that a definite upper limit on particle size exists if one is to obtain satisfactory distribution. Table 1 indicates the approximate number of procaine penicil-

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lin crystals per gram and per pound of finished poultry feed in relation to particle size. The level of supplementation corresponds to 2 grams of sodium penicillin activity per ton of complete feed.

Table 1—Penicillin Particle Size vs. Distribution

Av. diameter, microns	Number of particles Per gm. feed	Per lb. feed
10	1,100	500,000
25	75	35,000
50	9	4,300
100	1	530
250	0.1	35

Another consideration governing particle size is stability in feeds of moderate to high moisture content. It is readily apparent that sensitive ingredients will show poorest stability in very finely milled form. There are definite correlations, in certain cases, between stability in feeds and exposed surface area per unit weight of active ingredient.

In view of these considerations, an optimum particle size range must be determined for every active ingredient.

POTENCY RANGE

Having selected a dry supplement form and a suitably stable active ingredient of optimum physical form, one must then establish the most practical potency for the supplement. This will obviously be governed largely by recommended usage levels. The objective is to formulate the supplement so that a convenient number of ounces or pounds will adequately fortify one ton of finished feed product. Thus, potencies of most antibiotic feed supplements are set such that 1 to 3 lb. will be added per ton of feed.

It is important that the active ingredient be diluted sufficiently to facilitate blending into feeds by the feed manufacturer. Feed mixing equipment varies in efficiency from company to company depending on mixer capacity, blending time, feed composition, type of equipment, etc. Sufficient bulk in the form of diluents must be provided with the required amount of active ingredient to insure proper distribution by all types of equipment.

Another consideration which may influence product potency is package size. It is obviously desirable that the standard bag and drum sizes be applicable if costs are to be held to a minimum. Most antibiotic feed supplements are packaged in 10, 25 and 50 lb. multiwall bags and in 100 lb. drums.

DILUENT SELECTION

Diluents must maintain or enhance the stability of the active ingredients. Numerous factors must be considered in this connection.

Many antibiotics are adversely affected by small amounts of metallic contaminants such as iron and copper. In the selection of inorganic diluents such as calcium carbonates and phosphates, it has been found desirable to set a maximum limit for Fe_2O_3 of about 0.2%. In feed sup-

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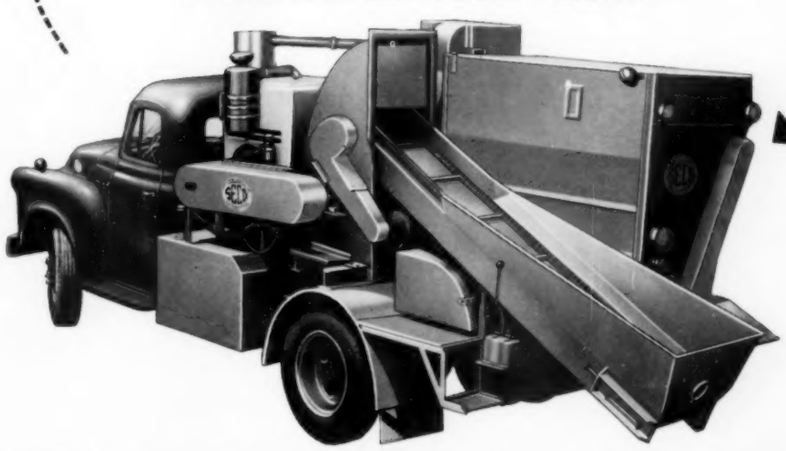

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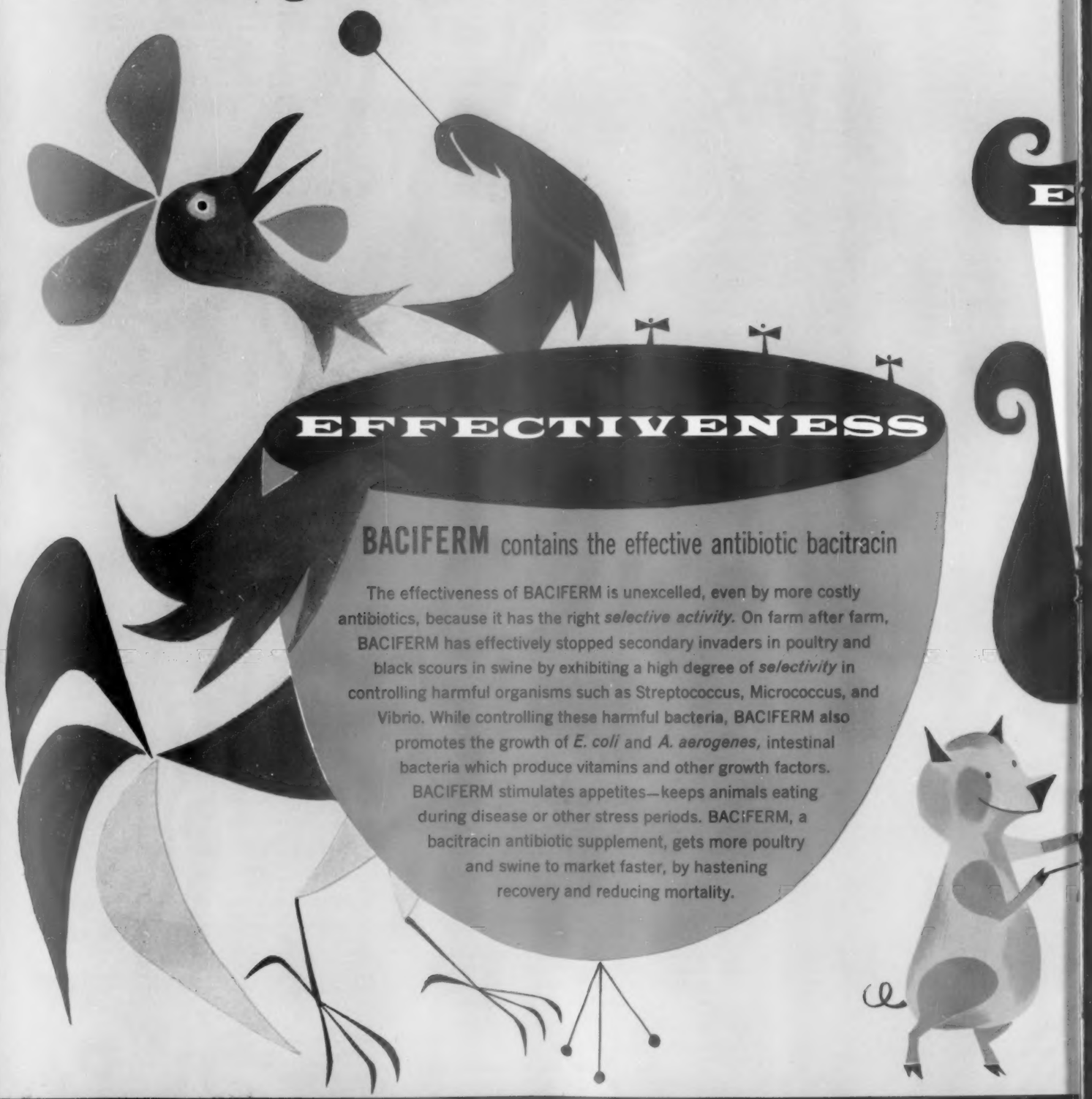

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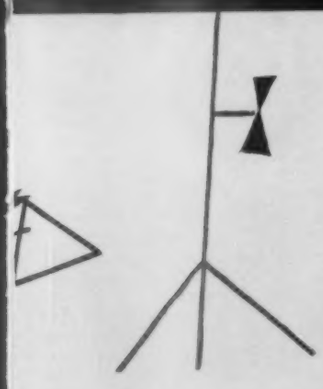

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plements of lower moisture content, the effects of trace metals are not as great.

Fat Stability Important

If cereal diluents containing natural or added fats are to be used, one must determine the fat stability. Unprotected fats rapidly oxidize in the presence of trace minerals and moisture to form peroxides which can in turn decompose fat-soluble vitamins. In addition, the aldehydes and ketones formed in this fat oxidation will result in off odors and flavors which will be objectionable to both the feed manufacturer and to animals receiving the finished feed.

The stability of many antibiotics and vitamins in aqueous solution is intimately related to pH. Since most feed products will contain from 4% to 14% moisture, pH can be an important factor. Values on 1:10 water slurries of feed supplements should be in the range of 5.5 to 7.5 for optimum stability of micro-ingredients. The use of diluents exceeding this range is undesirable, particularly in products containing higher moisture levels.

Most antibiotics and many vitamins are sensitive to higher moisture levels. It is therefore essential to employ diluents which have low equilibrium moisture contents, and which are relatively non-hygroscopic. Inorganic diluents are generally ideal from this standpoint, but they seldom can be used exclusively because of high density. Prolonged storage of feed supplements in areas of high relative humidities for 6 to 12 months is not uncommon.

Hygroscopic Problems

If carriers have pronounced hygroscopic tendencies, there may be caking, potency loss, increased degradation due to trace metals, and possible mold growth with attendant overheating during summer storage. Commonly used organic carriers, such as soybean oil meal and distillers grains, are often pre-dried. The finished supplements are generally packaged in multiwall bags having a vapor-proof asphalt or polyethylene laminate layer.

Since only a few per cent of a feed supplement are active ingredient, uniform distribution of this ingredient is essential. To accomplish this, one must try to match the bulk density of the diluent to that of the active ingredient. It is a rare, but happy, coincidence when only one diluent is required. In most cases, it is necessary to employ a predetermined ratio of three or more diluents for best results.

One or more diluents may require premilling under fixed conditions to obtain a desirable particle size range. Occasionally, all diluents can be preblended and milled together. The active ingredient, depending on its own particle size and density, may be blended in before or after diluent milling.

Nutritive Value Desirable

In general, it is desirable to employ diluents having definite nutritive value (e.g. calcium carbonate, soybean oil meal, etc.).

When a blend of several diluents is employed, it is often possible to observe individual ingredient particles due to differences in color, shape, etc. This imparts a speckled appearance to the finished product. While this does not affect animal feed intake, the feed manufacturer may mistake a "speckled" appearance as indicating a non-uniform product. Appropriate selection and processing of diluents will correct this.

Finally, the diluents selected must meet the approval of the Association of American Feed Control Officials and the various state departments of agriculture. The listing and descriptions of each ingredient on the feed supplement label must follow carefully prescribed regulations.

USE CONSIDERATIONS

With the increased use of continuous line operations in the feed industries, and the trend toward automation, the flow properties of antibiotic feed supplements become increasingly important. It is readily apparent that, if the product does not flow uniformly for any pre-determined setting of the automatic feeder, serious variations in the level of supplementation of the finished feed will occur.

Although flow properties are markedly influenced by the design of the bin and feeding device, it is important to consider such factors as bulk density, particle size, particle shape, hygroscopicity, etc. Poor flow can be a serious fault in a feed supplement and considerable attention must be given to each of the factors involved so that a satisfactory free-flowing blend will result.

Dustiness Objectionable

From the manufacturing standpoint, dustiness can be a very objectionable characteristic. If the product contains a high percentage of fines, considerable dust will result during charging and blending operations. This is an annoyance to personnel and a possible explosion hazard. In addition, if the active ingredient is exceptionally fine, it is quite possible that significant amounts of activity may accumulate in the dust collecting system.

Another problem associated with the use of rather fine materials is the pick-up of static electrical charges. This can be extremely troublesome to the feed manufacturer as the active ingredient will tend to segregate and cling to the interior surface of processing equipment. Since some active ingredients such as procaine penicillin, riboflavin, etc., may possess this objectionable property, it is often necessary to resort to extreme care in feed supplement formulation to minimize or eliminate this behavior.

If the moisture content of a product is high, or if one or more ingredients is hygroscopic, caking will often occur. This condition may develop during storage of the feed supplement, resulting from the pressure exerted by the stacked bags overhead. It may also occur in the bulk storage bins before use. This latter occurrence is extremely serious as clogged storage bins generally necessitate a complete shut-down

(Continued on page 69)

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WRITE FOR THE DAFFIN FEED MERCHANDISING PLAN TO DEPT. NO. FS-20

Reduced Oats Supplies for 1956-57 Season Indicated in USDA Report

WASHINGTON—Supplies of oats for 1956-57, currently estimated at 1,491 million bushels, are 311 million below domestic supplies for 1955-56. This total, the U.S. Department of Agriculture explains in its quarterly oats market summary, is based on July 1 estimates of production and the carryover.

Oats supplies in the 1955-56 year totaled 1,802 million bushels.

The 1956 oats crop is forecast at 1,144 million bushels and is the smallest crop since 1943. This is 24% below last year's near-record crop of 1,499 million bushels and 14% below the 10-year average of 1,327 million bushels.

Acreage seeded to oats last fall and this spring is expected to total 44.5 million acres, 6% less than the record 47.4 million acres seeded for 1955 production, but about equal to the average. The acreage that will not be harvested for grain, including abandonment and diversion of acreage to hay, pasture and the soil bank is indicated at 9 million acres, or 20% of the seedings.

Largest Stocks

Stocks of oats in all positions on July 1 totaled 346.6 million bushels, one seventh larger than last year and the largest of record, USDA reports. Oats stocks a year ago amounted to 302.7 million bushels and the 10-year July 1 average was 253.8 million.

Imports of oats dropped sharply last season reflecting lower prices. Canadian prices averaged generally higher than prices in this country with the result that less than 3 million bushels of oats were imported last season. This is in sharp contrast to a year ago when imports totaled nearly 20 million and two years ago when imports amounted to a record of 79 million bushels.

USDA reports disappearance of oats during the 1955-56 season totaled 1,458 million bushels, the third largest of record, exceeded only in the 1945 and 1946 crop years. This disappearance compares with 1,353 million bushels last season and 1,312 million for the five-year average (1949-53).

More Oats Fed

Exports totaled 25.4 million bushels compared with 12.5 million in 1954-55. During the 1955-56 season 1,284 million bushels of oats were fed compared with 1,187 million a year earlier and 1,107 million during 1953-54.

Sales of oats by the Commodity Credit Corp. for the 1955-56 season totaled 32.6 million bushels compared with 40.4 million for the 1954-55 season. Of the 1955-56 sales, 23.9 million bushels were for export, 6.6 million domestic sales, and 2.1 million under the emergency feed program. On July 1 CCC owned 58.5 million bushels of oats in all positions.

Farmers put 68.7 million bushels of 1955 crop oats under price support this season compared with 74.5 million a year ago and 55.9 million from the 1953 crop. The 1956 oats crop will be supported at an average of 65¢ bu. as against 61¢ for the 1955 crop.

Oats prices on the farm during the 1955-56 season averaged 59.6¢ bu., 12¢ less than a year earlier and the lowest since 1942-43, according to USDA. However, influenced by the smaller 1956 crop, farm prices averaged 65¢ bu. July 15 compared with 60¢ bu. a year earlier.

Richard A. Reed

DIVISION HEAD—Richard A. Reed has been appointed head of the jobbing division of John W. Eshelman & Sons, Lancaster, Pa. He will succeed Marshall M. Ford who retires Nov. 1. Mr. Ford joined the firm in 1917, serving first as a salesman in the Philadelphia-South Jersey area. Later he served as sales representative in a number of the company's sales territories. In 1950 he was appointed head of the jobbing division. Mr. Reed is a graduate of the University of Missouri and prior to joining the Eshelman firm was owner and manager of R. A. Reed & Co., Corning, Ark., where he was engaged in the buying and selling of grains.

PURINA SCHOLARSHIP

URBANA, ILL. — Max Harvey Newport of Poplar Grove, Ill., is the 1956-57 recipient of the $500 Ralston Purina Co. scholarship at the University of Illinois College of Agriculture. Mr. Newport will be a senior student in agriculture this year. He works on the family dairy and swine farm during the summer and part time on the University's poultry farm during the school year.

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Smaller Barley Supplies Seen in 1956-57 Season

WASHINGTON—Based on July 1 conditions, supplies of barley for 1956-57 total 462.5 million bushels, according to the U.S. Department of Agriculture. This compares with the record of 530.8 million for 1955-56 and 356.3 million the five-year average.

The quarterly barley market summary issued by the USDA points out that a crop of 347.7 million bushels is forecast for the current crop. This is 13% less than the large 1955 crop of 400.3 million bushels, but 23% greater than average.

Drouth conditions prevailing over the western Great Plains have not only resulted in considerable abandonment of acreage but have reduced yields on the acreage remaining for harvest. Conditions as of July 1 indicate 12,867,000 acres will be harvested for grain, 12% less than the 14,533,000 acres harvested in 1955 but 23% more than average.

Stocks Smaller

Stocks of barley in all positions on July 1, totaled 114.8 million bushels, 12% smaller than on July 1, 1955. Stocks of barley on farms July 1 totaled 39.5 million bushels, compared with 44.2 million a year earlier. Of the total stocks of barley on July 1, Commodity Credit Corp. owned 60.5 million bushels.

Imports of barley last season totaled nearly 25 million bushels. This was 2.6 million more than for 1954-55 and with the exception of 1953-54 was the largest since 1944-45.

USDA reports that disappearance of barley during 1955-56 was a record 440.9 million bushels, 98.8 million more than during 1954-55 and 161.0 million above the five-year (1949-53) average. This reflects the heavy feeding and the record high exports which totaled 97.6 million bushels during 1955-56. Exports of barley in 1954-55 amounted to 39.7 million bushels.

Record Amount Fed

The quantity of barley fed at 226.1 million bushels was the largest since 1943-44, 40.7 million more than last year and 86.2 million more than the five-year average.

Sales of barley by CCC totaled 91.5 million bushels during the period July 1, 1955, through June 30, 1956. This compares with 44.5 million bushels during the previous year. Of the total sales during the past year, 85.6 million bushels were sold for export and 5.7 million were for domestic use.

Feed Barley Price Stronger

Barley prices at the farm averaged 92.8¢ bu. this season as compared with $1.09 for the 1954-55 season. Feed type barley at Minneapolis averaged 94¢ bu. during July, 5¢ above the July price a year earlier.

Farmers put 96 million bushels of 1955-crop barley under the price support program compared with 114.7 million bushels for the 1954-55 season.

"Rumen Factor" Supplements Boost Beef Gains in Test

UNIVERSITY PARK, PA.—Steers fed low quality roughage can increase weight gains from supplements containing ingredients which have "rumen factors," according to a report from the Pennsylvania Agricultural Experiment Station. The supplements, the report points out, stimulate action of rumen organisms in addition to supplying needed protein.

The report is based on feeding trials at the Pennsylvania station.

Good gains were noted the past two years in steers wintered on silages plus 3 lb. per head daily of a certain supplement. Some of the silage was of low quality.

Three kinds of silage were tested—corn with ears, corn stover and grass. A simple mineral mixture also was fed free-choice.

The researchers said feeding of silage and supplement did not produce a high degree of market finish, and they said steers wintered in this manner appear desirable for further drylot feeding.

The supplement used contained 1,395 lb. of soybean oil meal, 200 lb. each of alfalfa meal, dried molasses distillers solubles and molasses, plus 5 lb. of vitamin A and D feeding oil.

A report on the trials is found in the summer issue of Science for the Farmer, published by the Pennsylvania station.

Restricted Feeding Of Hogs Discussed

ST. PAUL—By controlling feeding and breeding, modern hog raisers can produce a good meat-type carcass, a pair of University of Minnesota scientists said recently.

Prof. L. M. Winters, recently retired from the Minnesota staff, said 28 years of research produced the Minnesota 1, 2 and 3 hog breeds, which can be crossed to yield as good a meat-type hog as any packer would want.

Results of trials in feeding and cross-breeding with Minnesota hog breeds were explained by C. L. Cole, of the university's North Central Experiment Station at Grand Rapids, Minn.

Prof. Cole described two crosses of Minnesota pigs, and he said either did best on a ration restricted to between 80 and 90% of full feed. He said pigs from the crosses, when fed the restricted rations, reached 200 lb. at 145-151 days of age and carried the right amount of back fat to grade high.

Prof. Winters said restricted feeding helps with any hog breed, but he emphasized the importance of breeding. He said the three Minnesota breeds can be crossed to produce hogs with ideal carcasses, and the farmer need only supply a good ration.

Prof. Cole reported on other tests in which various levels of feed were given to crossbreds; the 87 and 82% feedings produced the best carcasses.

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Chick Viability and Pantothenic Acid Deficiency in the Breeding Diet

● Hans Fisher and C. B. Hudson, Rutgers University, New Brunswick, N.J.; Poultry Science, Vol. 35, No. 2, pages 487-88 (March, 1956).

For the past year cases of high chick mortality during the first week of life have been reported with increasing frequency at the New Jersey Poultry Diagnostic Laboratory in New Brunswick. Symptoms of disorder included general listlessness and weakness that suggested a possible B-vitamin deficiency. Hatchability was reportedly excellent, and no signs of pathogenicity could be detected in the affected birds. In this connection, a case history was reported.

A Pennsylvania hatcheryman who was losing 10-15% of all chicks hatched during the first few days after hatching brought to the laboratory day-old chicks. Since no pathogens could be detected, it was decided to study vitamin treatment of the afflicted birds. Fifty birds were divided at random into two groups. A water solution of B-vitamins was administered by mouth to one group, and an equal amount of water only to the other, or control group.

The vitamin treatment was very effective in reducing mortality. In a second trial, for which more afflicted birds were obtained, the chicks were divided into several groups, but in this case each group was administered one of the B vitamins of the mixture previously tried. The results demonstrated that the chicks were suffering from a pantothenic acid deficiency.

The hatcheryman treated all his newly hatched birds with a vitamin solution and the results were excellent. At the same time the breeder who had been using a diet which theoretically should have supplied enough pantothenic acid added this vitamin and after several weeks the condition cleared up.

A possible explanation is that the inclusion of fat into poultry rations increases the pantothenic acid requirements, since it is a major component of coenzyme A, which in turn has been shown to be most important in fat metabolism.

COMMENTS:

Most feedstuffs ordinarily included in poultry feeds are fairly good sources of pantothenic acid. Milk by-products are among the best sources of pantothenic acid and therefore diets composed largely of cereal grains, meat scraps, fish meal and no milk products may be deficient in pantothenic acid. It is also known that kiln-drying of corn destroys much of the pantothenic acid originally present.

Feedstuffs which are good sources of pantothenic acid are peanut meal, liver meal, dehydrated alfalfa meal, yeast, dried distillers solubles, and wheat bran. Then there is the crystalline vitamin itself which can be purchased at reasonable prices.

The recommended level of pantothenic acid in breeder rations in the past has been 5.5 milligrams per pound of ration; however it looks as if this may to be revised.

●

Grit Feeding Affects Growth And Feed Utilization of Chicks and Egg Production of Laying Hens

● S. L. Balloun and R. E. Phillips, Iowa State College, Ames; Poultry Science, Vol. 35, No. 3, pages 566-69 (May, 1956).

It is generally believed that it is desirable to include some type of hard grit in the diet of chickens for optimum feed utilization and health. One objective of this study was to compare the rate of growth and feed efficiency of chicks fed a grey granite grit, an insoluble red quartzite and common river sand. Another objective was to determine the effect of including grit in the diet of laying hens confined in cages.

Two experiments were conducted with young New Hampshire chickens confined to batteries and fed a practical broiler mash ration. In the first experiment, chicks were started on experiment at three weeks of age and were fed the experimental diets for

HOW UNION BAG BUILDS MORE BUSINESS FOR THE FEED INDUSTRY

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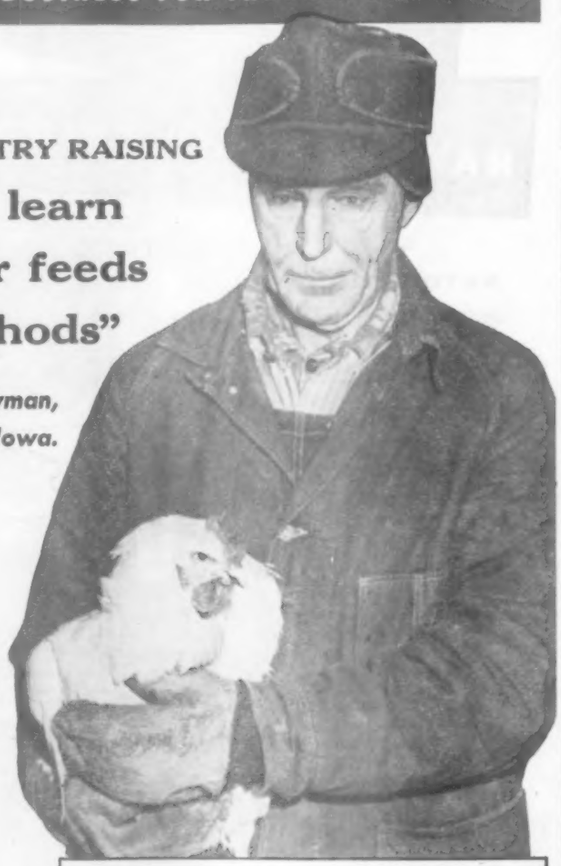
Albert Eckhardt, poultryman, Muscatine, Iowa.



"Folks order my Iowa eggs and chicks from as far away as Florida," says veteran poultryman Albert Eckhardt. "I think one reason is that I've always kept up-to-date on the newest and best in poultry raising."

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Bruce Verkruyse Joseph Ranker

APPOINTED—The appointment of a district manager and an assistant district manager has been announced by Leland S. Rolf, vice president and general sales manager of Honeggers' & Co., Inc., Fairbury, Ill. Joseph Ranker has been named manager of the Winterset, Iowa, district. Before joining Honeggers', Mr. Ranker managed a general farm store at Medora, Iowa. Prior to that, he was employed by a contracting firm in Tiffin, Ohio. New assistant manager of the Galesburg, Ill., district is Bruce Verkruyse. A 1955 graduate of the University of Illinois College of Agriculture, he taught vocational agriculture at Geneseo, Ill., last year.

a period of three weeks. All feed, including grit, was offered ad libitum.

Chicks fed either the grey granite or the red quartzite grit, or the two in combination, gained approximately 12% more than the control groups during the three-week experimental period. Feed efficiency was also improved approximately 10% by the feeding of either grit. There was no apparent advantage of one grit over the other, nor did a combination of the two prove better than either alone. The chicks had little or no preference for either type or color of grit when allowed free access to each.

A second experiment substantiated the findings of the first test, but in this test common river sand was as valuable as the quartzite or granite in improving gains and feed conversion.

An experiment with adult birds was also conducted. Ninety-six White Leghorn hens were confined to individual wire-floored cages and were continued on test for eight weeks.

With eight hens per lot, the following four treatments were tested: (1) All-mash, no grit; (2) All-mash plus grit; (3) Mash and grain, no grit; (4) Mash and grain plus grit.

The all-mash diet used in this experiment was a practical type 16% protein ration commonly recommended for caged layer feeding. The mash and grain feed consisted of a mixture of one part 26% protein mash and two parts grain (whole corn and oats). With both systems of feeding the feed and water were offered ad libitum. A red quarzite and a grey granite grit were also fed.

There was no difference in egg production or feed utilization between the lots fed either of the two grits. Added grit in the mash and whole grain system of feeding increased egg production 10%; with the all-mash system of feeding, the increase due to grit was about 5%. The improvement in feed utilization as measured by feed required per dozen eggs was also greater with the mash and grain system of feeding. It would appear that the feeding of an insoluble grit to laying hens is most beneficial when whole grains are a part of the diet. However, the results of this test would indicate that even when an all-mash ration is used, the feeding of grit is desirable when hens are confined to cages. No differences in egg shell thickness were observed which could be ascribed to grit feeding.

COMMENTS:

The results of the experimental work discussed here show that it is a worthwhile practice to supply grit to chickens that are reared and managed so that they do not have access to the soil. In selecting a grit to be fed, careful consideration should be given to its physical properties. The grit should not fracture easily and break into small pieces. It should also be sufficiently hard to withstand the pressures to which it is subject in the gizzard.

In spite of the fact that grit is not essential to the chick, it must be noted that it plays an important role in the digestion of feed of this species. While the information here does not enter mixing feed as such, it deals with a management practice which can make a good feed even better. The increased popularity of the caged-layer system makes this information more timely.

NAMED TO DANNEN POST

ST. JOSEPH, MO.—The appointment of Bryce Harris of St. Joseph as assistant credit manager for Danner Mills, Inc., has been announced by Dwight L. Dannen, company president. Mr. Harris, for five years before accepting the position with Dannen, was assistant credit manager for the American Electric Co. of St. Joseph.

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Water Usage Data Compiled by USDA Scientists

WASHINGTON — Livestock men faced with a problem of carrying cattle through drouths when ponds and wells are dry and stock-water generally is short may find a practical answer to their situation in data compiled by U.S. Department of Agriculture scientists on quantities of water consumed by beef and dairy cattle of different classes and sizes at various temperatures and rates of feed intake.

Such data heretofore have not been generally available. In response to many inquiries from livestock producers, county agents and agricultural engineers for such information, Dr. C. F. Winchester and M. J. Morris of the Agricultural Research Service have brought together all the published information available along with data they were able to record in experiments at Beltsville, Md., in a series of tables which are now available.

The two scientists point out that feed and water intake are closely related—if consumption of one is curtailed, the other also is limited. Then, too, it has been known for many years that water intake per unit of dry matter is the same whether cattle are on full feed or on near-starvation rations. In a pinch, a livestock man can cut water consumption of his herd in half simply by halving the feed allowance.

However, the scientists point out, this measure should never be employed with lactating cows if it can be avoided, because it would result in a decline in production that might not be overcome during the lactation period.

Water Intake Varies

How water intake can vary with differences in feed and air temperature level is indicated by the following examples:

A 1,000 lb. animal on maintenance rations—neither gaining nor losing weight—will consume 4 gal. water a day when the air temperature is 40°, 6 gal. at 70° and 9 gal. at 9°.

A 1,000 lb. steer or heifer gaining the normal pound-a-day on the range requires 7 gal. water a day when the air temperature is 40°, 10 gal. at 70°, and 17 gal. at 90°.

Cutting feed allowances for steers in fattening lots on full rations will decrease water consumption and may help a livestock man through a short-time water shortage that otherwise might be serious. However, it should be recognized that if the feed allowances of fattening cattle are sharply reduced, considerable time may be required to get them back on full feed again once the water shortage is relieved.

How water intake is increased by lactation is indicated by the following:

A 1,000 lb. dairy cow gaining no weight but producing 35 lb. milk daily containing 4% butterfat requires 14 gal. water when the air temperature is 40°, and 18 gal. at 70°. She can be expected to drop to 25 lb. milk at 90° and will consume 19 gal. water daily.

Body Size Influences

Body size influences water intake and the scientists have found that, with other factors equal, a 500 lb. animal drinks 0.6 as much as a 1,000 lb. individual rather than just half as much. A 100 lb. animal drinks 0.2 as much as a 1,000 lb. one, not 0.1 as much.

Using figures from the Winchester-Morris tables it is possible for a livestock producer to estimate probable daily water consumption of any large herd of cattle, and to plan an adequate water system for his farm or ranch. However, the data are not intended for use in determining requirements of individual animals or small herds because of wide variations in water intake of individuals.

The data tables are available from the Information Division, Agricultural Research Service, U.S. Department of Agriculture, Washington 25, D.C. They are subject to revision in future years as additional data on water needs of cattle are obtained through further experimentation.

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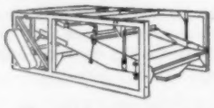
GUY STIFFLER

Moreover, your SPROUT-WALDRON MAN is thoroughly trained to help you increase production at lower unit costs. For example, Guy Stiffler is a typical Sprout-Waldron representative. After six years on the Muncy engineering staff gaining experience in Sprout-Waldron machinery and milling problems, Guy then started serving the millers of his territory. They can testify to his helpfulness, as can all Sprout-Waldron customers concerning their own SPROUT-WALDRON MAN.

SPROUT-WALDRON PELLET CLEANER & GRADER WITH SCALPER



Classifies and cleans pellets and crumbles without switching screens, because of double-deck shoe. Grading assembly built of aluminum to minimize weight and to reduce vibration. A high-capacity, trouble-free unit that can't be beat for the job.

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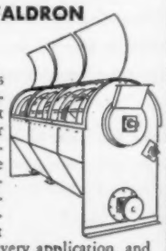

Sometimes reels or other grading equipment are the answer to feed dressing. The wide range of Sprout-Waldron grading and separating equipment covers almost every application, and offers a great variety of combinations. There are many sizes and types of wood and metal reels, shaking and gyrating screens, air separators, scalping shoes and cylinders, sifters, graders and magnetic separators. At Sprout-Waldron, you're bound to find the *one best* answer to your problems of grading and separating

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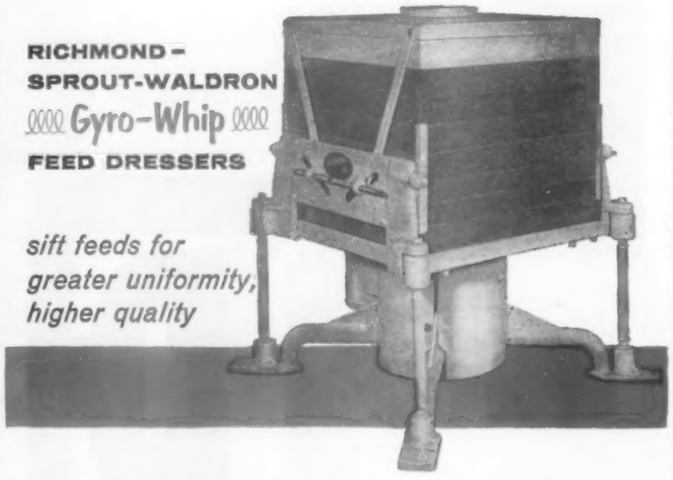

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SE/406

Variation in Grinding, Mixing Charges Shown In Washington Study

SEATTLE—Substantial variations in charges made for custom grinding and mixing were shown in a survey of country mixers made by the Washington State Feed Assn. recently.

The association surveyed a representative group of mixers in all areas of the state.

It was found that there was a substantial difference in charges made by firms in the same area, as well as among different areas.

Average rates were reported for several areas and counties, and it was found that cleaning charges ranged from $3 to $5. Grinding charges ranged from $3 to $5, and mixing charges ranged from $1 to $4.25. Charges for grinding when mixing varied from $3 to $4.75; rolling charges varied from $3 to $7. An additional charge when adding molasses varied from $1 to $3. In general, the lowest figures were for the Olympic Peninsula, where only one firm reported.

In addition to the average figures for the different areas, high and low rates were reported for each of the counties and areas covered in the study. An example of the variation within an area may be seen in the figures for one of the areas, eastern Washington. High and low rates for the various services were: Cleaning charge, $6 and $3; grinding charge, $6 and $3; mixing charge, $8 and $2; grinding charge when mixing, $5 and $3; rolling charge, $7 and $3.50; additional charge when adding molasses, $3 and $1.

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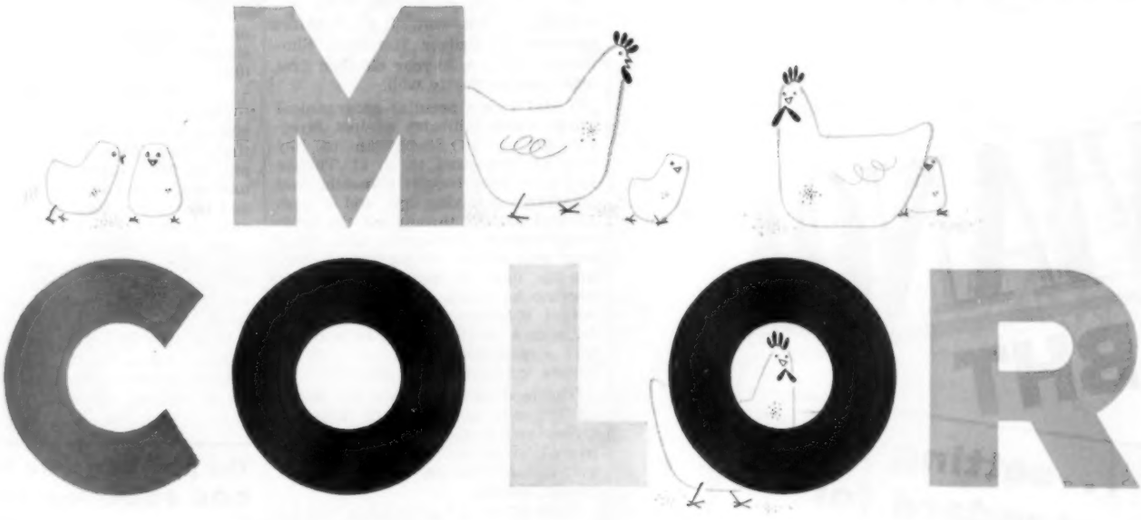

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SHELL

Wisconsin Dealer Supplements Mill Trade with Mobile Unit

By Martin Francis

Psychologists say that one test of the mature man is to be able to change with the time, to adapt himself to varying conditions. Thus, according to this test, J. O. Theune, operator of Badger Hatchery, Sheboygan, Wis., a 30-year old feed firm measures up pretty well.

Faced with a peculiar geographical setup which militates against farmers coming to Sheboygan to buy feed as they used to, J. O. Theune this past year bought a mobile feed grinding and mixing unit, and is operating it himself throughout the trade area around Sheboygan and doing very well with it. He prefers to operate the unit for himself for awhile, because he wants to know what the actual conditions are on the farm, for such a service. Later, he plans to hire a qualified operator to run the mobile unit under his direction.

The feed mill and store was started 30 years ago by J. O. Theune's father and mother. When the father passed away some years ago, the management fell on the shoulders of young Theune.

Sheboygan is a growing tourist city located on Lake Michigan which means there is no farm business to be obtained on that side of the city. Also, since the Badger Hatchery is located north of the city, very little farm business comes from the south. That leaves only two directions, north and west for business to flow into the store. The city has slowly been expanding and closing in the feed stores. Farmers, claims Mr. Theune, just do not like to drive into a city to buy their feed, especially hauling grains in to be ground.

Therefore, Mr. Theune reasoned, the thing to do was to go to the farmers and give them service right on their premises. So, he made a sizable investment in a mobile feed unit.

Method of Operation

First, he sent farm-to-farm salesmen to call on farmers and explain the service. Then as orders began to pile up, Mr. Theune took the mobile unit and began to proceed to farms and fill those orders. Needed ingredients to mix with the farmers' own grains were delivered in advance, so that when the mobile unit arrived on the scene, it was ready to go to work with all materials for the job on hand.

This plan of attack seems to be winning out as Mr. Theune is getting a good volume of work on this basis. He is winning quite a few new cus-

(Continued on page 65)

CALF DISPLAY—A live display is almost a permanent fixture in the feed store of Badger Hatchery, Sheboygan, Wis. Here Mrs. Anna Theune, who assists her son, J. O. Theune, in operating the store, proudly exhibits a fine Holstein calf. The operators claim a live display definitely increases feed sales and maintains one or more nearly the year around.

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cooked . . . toasted
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Nowhere else can you secure such a major part of your dog food ingredients. By combining your ingredient purchases in cars, mixed cars or LCL you are assured of freshness, and better inventory control with lower inventory investment. BOXER ingredients are manufactured by us specially for dogs—they are "prime" products, and not "by-products." Write for current prices and literature.

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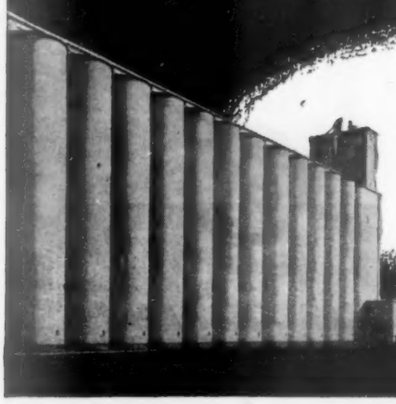

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Farmers Given Arguments on Switch to Cwt.

LAFAYETTE, IND.—The pros and cons of changing over the grain trading basis from bushels to hundredweight are presented to Indiana farmers in a recent issue of "Economic and Marketing Information" published by the Purdue University Agricultural Extension Service.

Dr. W. S. Farris, extension agricultural economist at Purdue, is author of the article. In his introduction he points out that both the farmer and the grain trade will be affected by the outcome of proposals to change the basis of trading. "The simplicity and economy claimed for the change to hundredweight basis must be weighed against the problems of a transition to such a system," he states.

The problem comes, he continued, from the difficulty in defining a bushel. As a volume measure, a bushel contains 2,150 cu. in. (this supposedly exact figure varies considerably by states and by commodities). The bushel as a weight unit applied to grains is especially variable for different grains, at different places and at different times.

Variation in Density

A part of the difference is between kinds and varieties of grain, and some is the result of state regulations. However, he says, the difference caused by the variation in density of grains of the same variety probably causes the greatest amount of trouble.

As an example he cites a bushel of oats, which is supposed to weigh 32 lb., but it may vary as much as 8 lb. more or less. Shelled corn legally weighs 56 lb. bu., but depending upon the density, a bushel may occupy 10% less to 5% more than the required volume.

A bushel of ear corn is presumably the amount required to yield 56 lb. of shelled corn, but this is not always readily determined, he says. The legal amount of ear corn per bushel in Indiana is 70 lb., prior to Dec. 1. After that date, 68 lb. of ear corn per bushel is the legal weight.

As a result of such variations, it is necessary to continually specify just what is meant when the term bushel is used. Hundredweight trading in grains might clear up some of the difficulties which prevail in bushel trading, Dr. Farris states.

The article continues:

Advantages of Cwt. Basis

(1) Sale of Grain By the Farmer. The price quotation is usually on a bushel basis. The grain is weighed in pounds. The buyer must make a conversion to bushels for making payment to the farmer. Settlement of the trucking charge also calls for a conversion of pounds back to bushels. Moisture, weed seed, foreign matter and damage are calculated in percent, but the discounts for these factors are on a bushel basis. These conversions wou'd be eliminated by using hundredweight as the basis for the sale of grain by the farmer.

(2) Comparing Feed Values. To make comparisons between feed ingredients and feed mixes the farmer makes the conversion of bushel values to hundredweight values. With oats at 60¢ a bu. and corn at $1.40 a bu., oats would be worth $1.87½ and corn $2.50 cwt. Food values of grain, other feed ingredients, and mixed feeds are more readily compared when the hundredweight basis is used.

(3) Grain Price Quotations to Farmers. Misunderstandings often arise when quoted prices do not correspond with prices ultimately used to figure settlement. While shellout tests reveal the true amount of corn delivered and other tests determine the quality, dissatisfaction sometimes results because price and weight differences on the bushel basis are not adequately explained. Comparison of cash values of grain from current quotations is difficult. Trading in hundredweights might simplify these price quotations.

(4) Conversion to Bushels by Ele-

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American Cancer Society

vators and Other Grain Handlers. It is estimated that the average bushel of grain is changed from pounds to bushels and back again a dozen times in the marketing channel. This takes time and increases the possibility of error. Bookkeeping costs could be reduced by eliminating the problem of converting back to bushels.

Disadvantages

(1) Change in Thinking. Many farmers and grain handlers would be reluctant to shift to "hundredweight thinking." They have become accustomed to thinking of yields, seeding rates and inventories in terms of bushels.

(2) Cost of Changing Records. The initial cost of changing both public and private records would be a problem. Production, prices, exports, sales have been recorded in terms of bushels. These would need to be changed in order to make historical comparisons.

(3) Bushel Grade Standards. The present grading standards set forth bushel requirements. For example, No. 2 corn must weigh 53 lb. bu., No. 1 soybeans 54 lb. bu., and No. 2 wheat 58 lb. bu. This might be more confusing if all other determinations were on the hundredweight basis.

(4) State Regulations. Some state regulations would have to be modified, since they specify trading and price regulations in terms of bushels.

Farm organizations and trade associations have shown considerable interest in hundredweight trading in grains. The United States Department of Agriculture is studying the problems involved in changing to this basis. Farmers should help answer this question: Will the simplicity and economy of hundredweight trading be worth the inconvenience and cost of making the change?

Kentucky Reports on Hormone Implant Test

LEXINGTON, KY.—Steers which had ear implants of either one or two pellets of diethylstilbestrol so far have outgained other steers which got no implants or which received three pellets, according to scientists at the University of Kentucky.

A. L. Parsons said the one-pellet group averaged 2.46 lb. daily gain per head, the two-pellet group 2.47 lb. per head. The no-implant group averaged a daily gain of 1.72 lb. per head, while the three-pellet group gained an average of 2.35 lb. daily.

The results were on the first 56 days of the test. The trials were to be continued another 50 to 60 days, depending on pasture availability in August and September.

Each group averaged 725 to 740 lb. weight per head at the start of the test. Six steers are in each group. These steers will not receive any additional stilbestrol implants. They are on a ladino clover-grass pasture, plus free choice water and salt.

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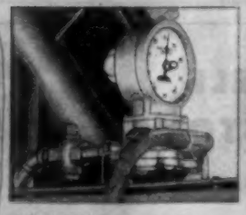
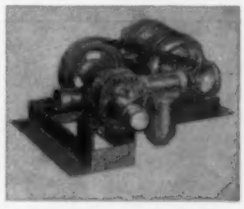


Molasses Meter records in pounds, gives unexcelled accuracy, has turnback attachment. 3-way valve (at left) can be conveniently hooked up for retail bulk molasses sales.

Variable Speed Control on the 1 H.P. screw conveyor gives you positive, finger-tip control of feed flow into the mixer. Conveyor can be removed from mixer and used elsewhere, if so desired.



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Great Sales Potential Cited at School for Hess & Clark Staff

ASHLAND, OHIO—The need for disease fighting drugs is more important than ever before, salesmen and supervisors for Hess & Clark, Inc., were told by Frank N. Getman, president, at the conclusion of a week-long company sales school.

"Rapid population increases and expansion of the livestock industry indicate even greater need for such drugs and point to greatly expanded sales potentials for Hess & Clark's animal health and animal feed medication products," Mr. Getman said.

Reviewing the progress in scientific research for animal disease control at the firm's research center, Mr. Getman announced that new facilities are being completed to accommodate an enlarged staff of scientists. The scientists will investigate many phases of disease control in poultry and farm animals and do original development work in the chemical field.

Sales school sessions emphasized product knowledge, sales techniques and practice sessions. Group sessions were led by Tom Winemiller, merchandising director for the animal health division; Charles Cervone, William Eidson, Walter Martin and William Lunceford, regional sales managers; Richard Budd, assistant general sales manager, and Dr. Aaron L. Andrews, advertising manager.

Featured speakers included Ed Hegarty, director of training service, Westinghouse Electric Corp., Mansfield, Ohio; Jack Jackson, radio and television farm director of station KCMO, Kansas City; Richard Waters, vice president of Vick Chemical Co.; Donald D. Dilworth, vice president of Klau-Van Pietersom-Dunlap, Inc., Milwaukee advertising agency, and Glen Fouche, vice president of Parade Publications.

HONORED — A silver plaque for "sterling salesmanship" was awarded to George Reynolds (left), a veteran of 27 years of sales service with Hess & Clark, Inc., at a banquet which concluded a week-long sales school for the firm. The Minneapolis salesman retired in 1955. The award was presented by Tom Winemiller (right), merchandising director for the animal health division of Hess & Clark, as Frank N. Getman, president, looked on.

Service pin awards were made to salesmen who have been with the firm for periods of from 5 to 40 years. Singled out for special recognition was George Reynolds, Minneapolis, who retired in 1955 after completing 27 years of sales service. He was presented with a silver plaque in recognition of "sterling salesmanship" for the company.

C & G Grain to Build Elevator in Texas

TOPEKA, KANSAS — The C & G Grain Co., Topeka, Kansas, has started construction of the firm's first Texas elevator on a site inside the Saginaw city limits, about four miles north of Fort Worth. Chalmers & Borton, Hutchinson, Kansas, has the construction contract.

H. B. Fink, Topeka, manager-partner of the grain firm said the elevator will be completed by the first of the year. The initial construction will be a headhouse and two section units. Each section will have ten pairs of tanks, the exact capacity to be determined later.

This will be the sixth elevator operation of the company. They are at Topeka, Salina, Atchison and Wichita, Kansas, and Lincoln, Neb.

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74 Feed, Allied Firms Contribute To 4-H Club Fund

SILVER SPRING, MD. — By mid-July 74 feed manufacturing and allied companies had made financial contributions to the work of the National 4-H Club Foundation, according to J. D. Sykes, vice president of the Ralston Purina Co., St. Louis, who is leading a fund raising program in the feed industry in behalf of the 4-H Foundation.

The drive got under way June 4 and will continue to Sept. 1.

Mr. Sykes, who is chairman of the Foundation Builders' Council, said that feed manufacturers and allied companies are joining with other agriculturally related groups such as fertilizer firms, farm cooperatives, banks and farm machinery manufacturers, in extending support to 4-H Club work on a nation-wide basis.

Cited as typical of the firms in or allied with the feed industry which have contributed to the campaign is Butler Manufacturing Co. Art W. Stegner of the Butler company is quoted as commenting: "The National 4-H Club Foundation is to be commended for its fine work with young people. The future of America will depend upon the youngsters of today. The dividends of teaching leadership to these young people will be a better America."

Contributions to the National 4-H Club Foundation will help the foundation to carry out such programs as (1) the International Farm Youth Exchange program, which arranges the exchange between the U.S. and about 50 countries throughout the world of nearly 300 rural youth each year to live and work with farm families in the cooperating countries; (2) the establishment and operation of the National 4-H Club Center, a working monument to 4-H in the nation's capital; (3) research into the developmental needs of young people, which will help make possible 4-H programs that more effectively meet the needs of boys and girls; and (4) human relations training for youth leaders, so that they can learn how best to work with 4-H members.

Companies that had contributed as of mid-July include:

Continental Grain Co., New York; Sparks - Waters - Farnen, Inc., St. Louis; Eagle Roller Mills Co., Shelby, N.D.; Yieldmor Feeds, Inc., Piqua, Ohio; A. H. Ascherman, Inc., San Francisco, Calif.; Whitmoyer Laboratories, Inc., Myerstown, Pa.; E. C. and W. F. Hopkins, Inc., Greenfield, N.H.; H. K. Webster Co., Lawrence, Mass.; Spartan Grain & Mill Co., Spartanburg, S.C.; Ralston Purina Co., St. Louis; Hardy Salt Co., St. Louis; Dawe's Laboratories, Inc., Chicago; International Milling Co., Minneapolis; Dr. Salsbury's Laboratories, Charles City, Iowa; J. McKenny Willis & Son, Easton, Md.; Chase Bag Co., New York; DeKalb (Ill.) Molasses Feed Co.; Arkell & Smiths, New York; Corman Bag Co., Chelsea, Mass.; Dixie Mills Co., East St. Louis, Ill.

John W. Eshelman & Sons, Lancaster, Pa.; Glesby Bros. Grain & Milling C.o, Monrovia, Cal.; Martin's Feed Mills, New Paris, Ind.; Miller Alfalfa Co., Defiance, Ohio; Myzon, Inc., Chicago; Valley City Milling Co., Portland, Mich.; Iowa Limestone Co., Des Moines; Honeggers & Co., Fairbury, Ill.; Nappanee (Ind.) Milling Co., Nappanee, Ind.; Morton Salt Co., Chicago; Miller & Bushong, Inc., Rohrerstown, Pa.; Savage Litho Co., Buffalo; Midwest Dried Milk Co., Dundee, Ill.; The Fox Co., Newfield, N.J.; Watt Publishing Co., Mount Morris, Ill.; Darling & Co., Chicago; American Maize-Products Co., New York; Blomfield-Swanson, Minneapolis; California Pellet Mill Co., San Francisco.

Harper Feed Mills, Inc., Washington, Pa ; Heywood & Rabb, Chattanooga, Tenn.; C. M. Keith Co., Decatur, Ill.; Merck & Co., Rahway, N.J.; Butler Chemical Co., Galena Park, Texas; D. C. A., Inc., Chicago, Ill.; Werthan Bag Corp., Nashville, Tenn.; H. J. Baker & Bro., New York, N.Y.; Dehydrating Process Co., Woburn, Mass.; National Molasses Co., Oreland, Pa.; Pay Way Feed Mills, Kansas City; Ontario (Cal.) Feed & Milling Co.; Herman Nagel Co., Chicago; Stone Mountain Grit Co., Lithonia, Ga.; Butler Manufacturing Co., Kansas City; Chas. M. Cox Co., Boston; Nellis Feed Co., Chicago, Ill.; Wallace Menhaden Products, Inc., New Orleans.

Hudson Pulp & Paper Corp., New York; United Cooperative Farmers, Fitchburg, Mass.; Allied Mills, Inc., Chicago; Crete (Neb.) Mills, Division of Lauhoff Grain Co.; Chas. Pfizer & Co., Inc., Brooklyn, N.Y.; Farm Bureau Milling Co., Hammond, Ind.; A. E. Staley Mfg. Co., Decatur, Ill.; Nopco Chemical Co., Harrison, N.J.; Oyster Shell Products Corp., St. Louis; United Mineral Products Co., Omaha; International Minerals & Chemical Corp., Chicago, Ill.; Wallace M. Quinn Fisheries, Pascagoula, Miss.; Elk Valley Alfalfa Mills, Independence, Kansas; Monsanto Chemical Co., St. Louis; American Cyanamid Co., Fine Chemicals Division, New York; The Quaker Oats Co., Chicago; Hess & Clark, Inc., Ashland, Ohio, and one annonymous donor.

PLANT FIRE

MASON CITY, ILL.—An explosion followed by a fire damaged a storage building at a new $150,000 Faber Industries plant recently. Damage was estimated at $30,000 to $50,000. A workman was seriously burned. A company spokesman said the extraction plant would be down 30 to 60 days pending repairs but that the feed mixing plant operation would continue. A solvent is used in the extraction process, and it was believed that fumes from freshly treated meat scraps dumped in the storage building may have ignited.

Fat stability in feeds
is your problem too
As more and more feed manufacturers have recognized the value of using animal fats and meat meal in their feeds, consumption of these has gone up considerably. Along with this increased consumption, the problem of quality and stability has also grown.
As a feed manufacturer, you must be sure the animal by-products you buy are adequately stabilized against rancidity. For without sufficient stability, fat-containing feeds rapidly lose their palatability. Vitamin content and nutritional value decrease. To protect your feeds—to protect your sales—it is more important than ever that the fats and meat meal you buy be protected against deterioration by the proper antioxidant.
In recommending Tenox to your renderer, you are assured of receiving greases, tallows and meat meal of maximum stability. As the leading supplier of food-grade antioxidants, Eastman offers users the widest range available. Our long experience enables us to suggest not only effective and reliable formulations, but also the most efficient method of adding them.
If your renderer is not already using Tenox, tell him you want the protection of these efficient antioxidants. They are your best guarantee that your fat-containing feeds will win—and keep—satisfied customers. EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of Eastman Kodak Company, KINGSPORT, TENNESSEE.
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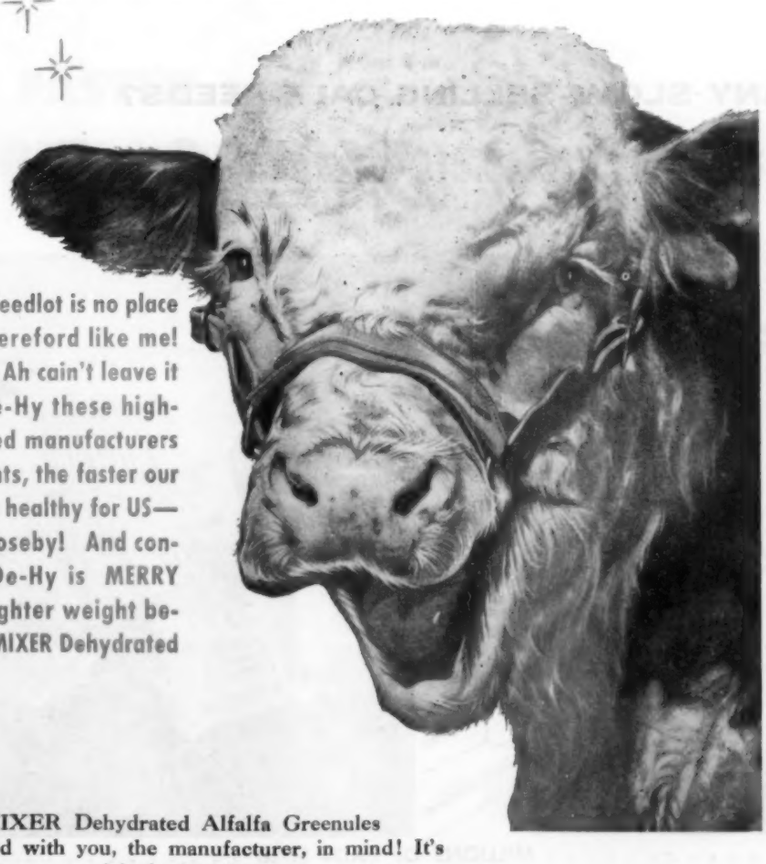

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MERRY MIXER Dehydrated Alfalfa Greenules are processed with you, the manufacturer, in mind! It's *freer flowing* . . . surprisingly *dust-free* . . . offers *better dispersion* . . . and is *more uniform* in texture. Altogether, a richer dehydrated alfalfa—tailor-made for YOUR feed requirements. Phone us or write for full details and prices!

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Virginia Reports Antibiotic, Fish Solubles Test

BLACKSBURG, VA.—The Virginia Agricultural Experiment Station recently reported on the results of a test in which high levels of antibiotic significantly increased chick growth when the diet contained fish solubles.

Low or high levels of Terramycin failed to stimulate the growth of chicks reared in batteries and fed a vegetable protein type diet, the report said. When fish solubles was included in the diet, however, high levels of the antibiotic, but not low levels, significantly increased growth rate to four weeks of age. Fish solubles alone also increased growth.

Location of the batteries in old or new quarters, or the presence or absence of droppings in the pens in old quarters did not significantly alter the responses.

The two-year test was conducted by R. W. Engel and E. L. Wisman of the department of biochemistry and nutrition and C. E. Holmes of the department of poultry husbandry.

The Virginia scientists said the test in general confirms earlier findings in other states. They said Aureomycin, penicillin and fish meal were used in the earlier tests. Their tests involved use of Terramycin and fish solubles.

The research, the scientists said, indicate an apparent high level antibiotic-growth relationship that involves fish products.

Although the source, or strain, of White Leghorn chicks was different in each of two experiments, responses to diet treatment were similar.

Previously, the researchers noted, the use of high levels of antibiotics has been accepted chiefly as therapeutic and preventive agents to combat diseases in poultry.

If cleanliness or newness of quarters is a factor that influences growth response to high level antibiotics, then the present results indicate that the terms "old" and "new" quarters and the presence and absence of droppings are not adequate to describe the bacterial environment as it pertains to high level antibiotic action in promoting growth, according to the report.

"At present," the report said, "there is no reason to suspect that the mechanisms of actions are basically different for high or low levels of antibiotics, i. e., both actions are still thought to be mediated through the intestinal microflora. The synergistic action of high levels with fish products may only suggest another facet to antibiotic action.

"The possibility that the high level antibiotic response was merely the result of controlling harmful organisms is negated by the observation that the response was absent when fish solubles was not present in the diet. Also, no outward symptoms of any disease conditions were noticeable in this study."

Antibiotic supplementations were made in the test at levels of 0, 10, 50, 100 and 200 mg. of Terramycin per pound of diet. Condensed fish solubles was added to half of the diets to replace 5% of the soybean meal.

THERE'S GOLD IN THEM THAR ELEVATORS

NEW BOSTON, ILL. — A lot of people have been building elevators, expecting to make profits on grain storage, but they probably wouldn't call such operations a gold mine. At any rate, in at least one case, it appeared that if you go into elevator construction "deeply" enough, you turn up something approaching a gold mine. A wokman for a contractor building a grain storage bin here recently found possibly $2 000 in old coins while he was helping excavate for foundations for the structure. First he found some silver coins, and then he started turning up gold coins, including $20 gold pieces. The latest date on the coins was 1860. Word of the discovery spread, and it became necessary to rope off the area and post guards to prevent unauthorized digging. Old timers in the community recalled that a livery stable once occupied the lot where the bin is being built. The 100,000-bu. structure is being built for McKee Feed & Grain Co.

Interest in Swine Testing Increases

AMES, IOWA — The increased interest in testing programs to stimulate production of meat-type hogs is apparent in a report from Iowa State College.

Ralph Durham of Iowa State says that about 1,500 litters of pigs are believed to be on test now in on-the-farm testing programs in Iowa to select meat-type breeding strains. Much of the testing is being done in county associations organized by local swine breeders. They hire a tester who makes backfat measurements and records of rates of gain.

Members keep individual records on each pig and earmark the test pigs individually. After the tester has analyzed their records, they are able to select and keep their best meat-type breeding strains.

A testing station sponsored by the Iowa Swine Producers Assn. is already in operation near Ames to provide a standard by which local breeders may check their testing. Animals are put on full feed at the testing station and evaluated as to rate of gain, feed efficiency and capacity to produce a valuable meat-type carcass on efficient Corn Belt rations.

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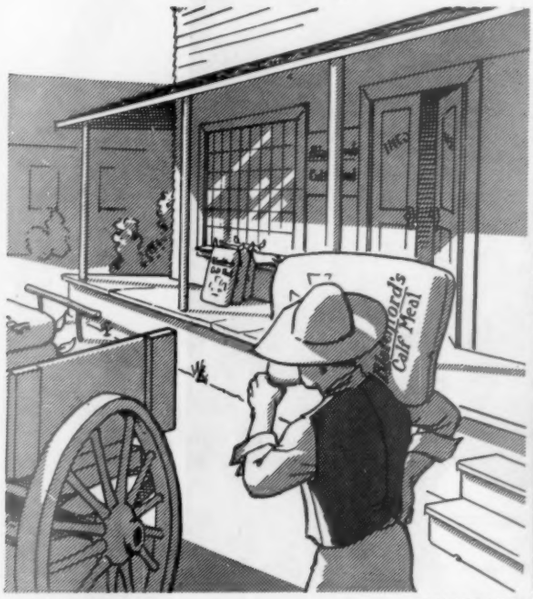

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Colorado Milling & Elevator Report Shows Higher Net Income

DENVER — Consolidated net income of the Colorado Milling & Elevator Co., Denver, for the fiscal year ended May 31 was $1,124,862, compared with $1,095,040 in the previous year.

Net sales and other operating income for the year ended May 31 totaled $98,082,730 compared with $102,772,688 for a year earlier. The figures were given in the firm's annual report for the fiscal year ended May 31.

The consolidated net income is at the rate of $2.03 per share on the outstanding 552,482 shares of common stock. The previous year, the net income was at a rate of $1.98 per share. Dividends aggregating $773,474 were declared during the fiscal year and were paid at the rate of 35¢ per share on Sept. 1, and Dec. 1, 1955, and March 1, and June 1, 1956.

Following is an excerpt from the statement of Robert M. Pease, president, which appeared in the report:

"Conditions in the flour milling industry during the fiscal year were of a pattern similar to those that have existed in recent years. Competition remained keen and profit margins were narrow. Drouth and other adverse factors created problems in some areas of the company's operations and curtailed somewhat the company's normal activities in merchandising, handling and storing wheat and other grains . . . In the light of the conditions that existed, the management considers that the income results for the year were satisfactory.

Subsidiary Sold

"During the year, the Sunset Milling & Grain Co., a wholly owned subsidiary, disposed of its assets that had theretofore been used in its business of the production and sale of formula feed and the merchandising of grains, flour and other products in the Los Angeles territory. On May 14, 1956, that company was dissolved and ceased to be in existence. The consolidated financial statements for the year give full effect to such dissolution including a reduction of approximately $4,000 in consolidated net income after taking into consideration a federal income tax savings of approximately $49,000 and the $175,000 reserve for anticipated loss set up in the accounts in the prior fiscal year. The financial statements do not, however, reflect additional tax benefits that may accrue to the company subsequent to May 31, 1956, for losses already recorded in the accounts which the company expects to claim as so-called tax carry forward losses under federal income tax laws against taxable income earned subsequent to May 31, 1956. If allowed, federal income taxes for the year or years in which allowed will be reduced and net income increased by approximately $180,000."

Fewer California Firms Producing Fats

SAN FRANCISCO — The number of firms producing vegetable and animal fats and oils used as feed additives fell from 76 to 70 in California between the summer of 1954 and last summer, but employment held almost steady, declining only fractionally from an average of 2,900 a month between July 1 and Sept. 30, 1954, to 2,800 for the same months of 1955.

The earnings of these employees also declined from an average of $543 a month in the earlier year to an average of $510 last year.

In the grain mill products industry, including feedstuffs preparations, the number of firms rose to 242 from 240 over the same period, and the average monthly employment from an estimated 8,000 to 8,100.

Earnings for workers in this industry were up from an estimated average of $390 a month in the summer of 1954 to $418 last year.

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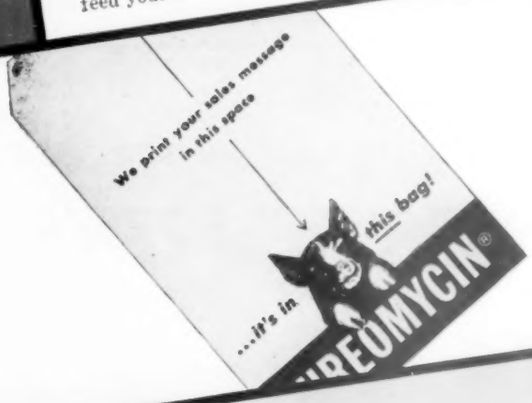

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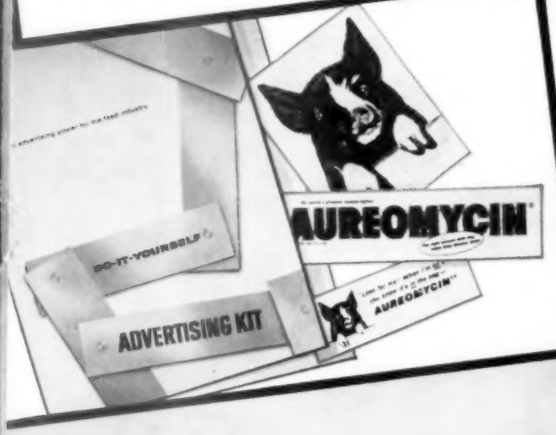

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Program Set for Iowa Nutrition Conference

AMES, IOWA — "What's New in Feeding" will be theme of the Iowa Nutrition Conference scheduled for Sept. 14 on the Iowa State College campus here.

Information about the latest feeding research done at the college will dominate the afternoon program. Speakers will include Dr. Norman Jacobson on dairy nutrition, Dr. Stanley Balloun on poultry nutrition, Dr. Wise Burroughs on beef cattle and sheep nutrition and Dr. Damon Catron on Swine nutrition.

Dr. J. M. Bohlen and Dr. G. M. Beal of the college's sociology department will conclude the afternoon program with a talk on "How Farmers Adopt New Ideas." Dr. M. Reed Lambert will preside for the afternoon program.

The morning program will open with an address of welcome by Dr. Floyd Andre, dean of the college's division of agriculture.

"What's New in Materials Handling on the Farm" will be the topic of Dick Hanson, executive editor of Successful Farming. Dr. D. F. Green, nutritionist for the Allied Chemical & Dye Corp., will talk on "Magic Bullets in the Feed Bag."

Dr. R. Scott Allen, associate professor of dairy husbandry and chemistry at the college, will wind up the morning's program with a talk on "Radioactive Traces in Nutrition Research." Prof. Robert E. Phillips will preside over the morning session.

The annual conference is sponsored by the Western Grain & Feed Assn., Feed Institute, Inc., the Midwest Feed Manufacturers Assn. and the college.

Pennsylvania Station Tests Hormones in Rations for Pigs

UNIVERSITY PARK, PA. — The Pennsylvania Experiment Station says preliminary tests reveal no apparent justification for the addition of two hormone-like substances, stilbestrol or methyl testosterone (at the levels tested), to the rations of growing-fattening pigs.

The experiments were conducted by J. L. Gobble in an attempt to determine whether these feed additives would improve the rate or economy of gain of pigs, or thickness of backfat or percentage of primal cuts.

The report said no significant results were obtained, although a tendency developed in those pigs fed the higher level of methyl testosterone toward decreased backfat thickness and rate of gain and increase in percentage of primal cuts. Certain changes were noted in reproductive organs of gilts and accessory sex glands of barrows slaughtered. Stilbestrol-fed gilts showed no breeding abnormalities, but the methyl testosterone-fed gilts were irregular in heat cycles and in general conceived only after repeated services.

Forty-eight barrows and gilts were fed in the experiments from weaning to market weight. The pigs were assigned to six treatment groups, each made up of two replicate lots of four pigs each. The rations were self-fed on concrete. The basal ration consisted of corn plus protein and mineral supplements to which the hormone-like materials were added in the following proportions: 75 micrograms of stilbestrol per pound of finished feed; 150 micrograms of stilbestrol per pound of finished feed; 300 micrograms of silbestrol per pound of finished feed; 2 milligrams of methyl testosterone per pound of finished feed; 4 milligrams of methyl testosterone per pound of finished feed.

In this way, two lots of four pigs each received the basal or the basal plus one of the experimental rations. The work is being repeated with higher rates of the hormone-like substances.

Program Set for Pennsylvania Convention

EPHRATA, PA. — The theme "Serving Tomorrow's Farmer" will be carried out in the program announced for the 78th annual convention of the Pennsylvania Millers & Feed Dealers Assn., to be held Sept. 24-25 at the Abraham Lincoln Hotel in Reading, Pa.

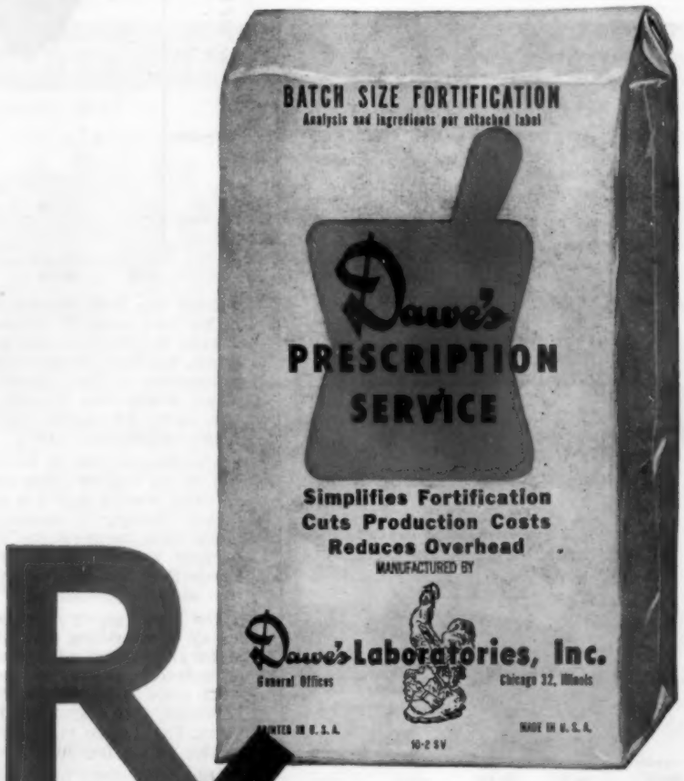
Richard I. Ammon, Ephrata, association secretary, cites the recent observations by leaders in agriculture and industry who have pointed out the trend toward "factory-like" operations in agriculture and larger and fewer highly efficient and specialized farms. Taking note of these changes, the convention program will include talks by authorities who will discuss the "revolution in agriculture" and the future of the feed business.

The program, Mr. Ammon said, is designed to supply guideposts to the future — ideas, forecasts and suggestions to aid the independent feed dealer in making such adjustments in his business as the changed conditions of tomorrow will demand.

A headline speaker will be Ezra Taft Benson, secretary of agriculture.

Other speakers will include Dr. E. P. Singsen, University of Connecticut; Dr. H. S. Wilgus, Peter Hand Foundation, Chicago; Dr. R. W. Swift, Pennsylvania State University; Prof. J. S. Taylor, Pennsylvania State University; Dr. R. M. Bethke, Ralston Purina Co., St. Louis; Dr. Samuel B. Gus, Pennsylvania State University; Eugene Flack, Sunshine Biscuits, Inc., and Donald Hock, mayor of Allentown, Pa.

The convention also will include exhibits by 20 firms supplying the feed industry, special events for the ladies, special entertainment and a golf tournament.



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UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

On Revised Parity

Much interest has been expressed in a remodeled parity formula; the consequences of such could mean much to the profit and loss statement. So much interest has been raised in fact, that congress asked the Secretary of Agriculture to make a thorough study of possible methods of improving the parity formula. A report is expected early next year.

(Readers of this column will recall that the old and new parity for wheat and corn was discussed in Feedstuffs, March 10.)

In view of possible implications for the livestock industry, and consequently the feed manufacturer supplying that industry, this article will discuss the old and new parity formulas for beef cattle and hogs. A comparison of how these two formulas would have worked out over the years for cattle and hogs is shown in Exhibits 1 and 2.

EXHIBIT 1—Beef Cattle: U.S. parity price, percent "new" parity above or below "old" parity, annual average for calendar year, 1924-53.

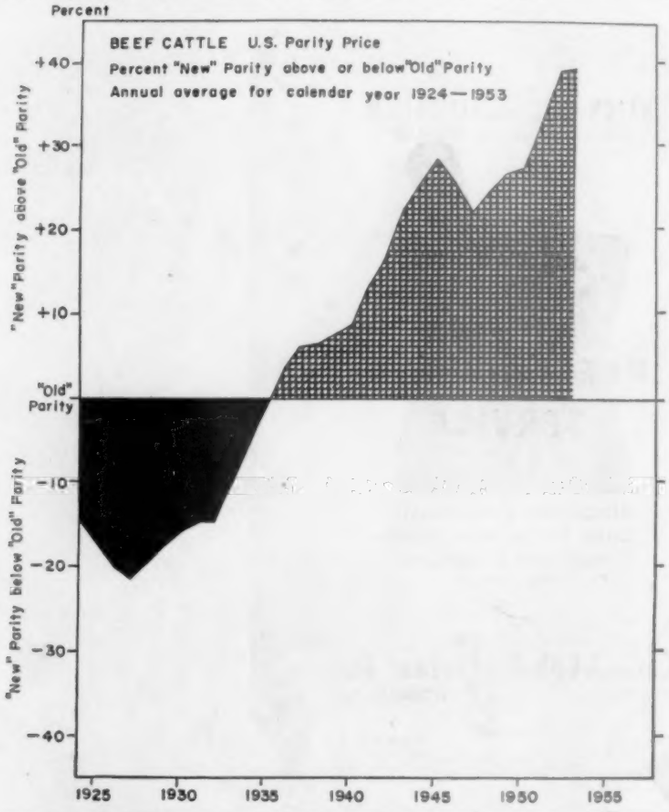

EXHIBIT 2—Hogs: U.S. parity price, percent "new" parity above or below "old" parity, annual average for calendar year, 1924-53.

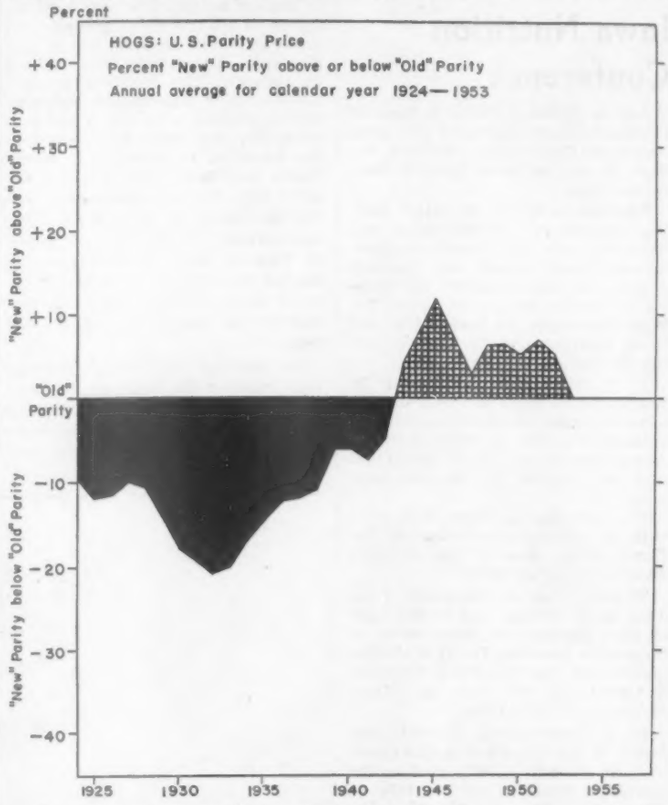

Exhibit 1 shows a comparison between "old" and "new" parity for beef cattle. "New" parity is shown as a percentage of "old" parity. It was assumed prices actually received by farmers would have been the same that prevailed had the "new" parity been a basis for the farm price support program. Exhibit 2 shows the same thing for hogs.

Some people have the false notion that new parity automatically would work towards lower prices for grains and higher prices for livestock and livestock products. Granted this might be what actually will happen over a period of time. But the reverse also could be true.

Notice how "new" parity for hogs took a nose dive during 1947 and has been decreasing the past several years. What happened was that other farm product prices went higher than hogs comparatively speaking. When livestock prices tend to be higher relative to the base period than grain and other product prices, parity will be higher when computed by the "new" formula as compared with the "old." The reverse would be true in the event that livestock prices remained at low levels for a period of years.

The general idea of parity is that 100 lb. of hog or steer should buy as much now as during a given base period. Changes in parity price are based upon changes in the prices farmers pay for an assortment of things they buy for family living as well as farm production.

The "new" parity formula provides a way of measuring purchasing power by allowing an adjustment among agricultural prices in accordance with price relationships that have prevailed over the most recent 10 years. Farm wage rates are included in this parity formula.

Otherwise, the "new" parity formula is quite similar to what we refer to as "old" parity. In the past, legal parity has been computed by using the average price farmers receive during the base period times the index of prices paid plus interest and taxes.

Agricultural prices as a whole are still compared with prices paid by farmers by using the 1910-15 base period. Thus, increases in parity by one or a group of commodities due to changes in market prices require that some other commodity be lower in parity price in order to balance.

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The Value of Barley and Fats in Feeding Chicks and Laying Hens

By Dr. E. R. Halbrook
Montana State College

EDITOR'S NOTE: The supply and price situation for barley as compared with corn in certain areas results in interest in possible levels of barley in poultry rations. Also, there is interest in the effects of adding fats to rations containing barley. These subjects are covered by Dr. E. R. Halbrook of the Montana State College poultry industry department in the accompanying article. Dr. Halbrook reviews some past studies and reports some new research findings. He says that results available to date indicate that high-barley rations are satisfactory for growing chicks and laying hens and that the results can be improved further for broiler production through the addition of stabilized tallow. This article is from a talk by Dr. Halbrook at the Montana Nutrition Conference.

The two major questions I wish to consider in this report are: What are the limitations in levels on barley which can be used in rations for various kinds and ages of poultry, and can we enhance the value of barley by utilizing some of our large supply (and therefore low priced) waste fats as an energy supplement?

Barley was accepted as a satisfactory grain for poultry feeding before the high energy rations gained wide acceptance. It has always been recognized as being lower in palatability, especially when fed whole, than the other three common grains, corn, wheat and oats. It is also higher in fiber than corn and wheat but lower than oats. These factors, together with the insignificant amount of vitamin A activity as compared to yellow corn, have been accepted as the two major handicaps to using barley in poultry rations; that is, low palatability, especially when fed whole, and relatively high fiber content.

Birds not accustomed to barley do not consume it readily without a period of training or adjustment, but when it is introduced into the feeding program early enough, they learn to like it and consume it readily.

If we use the accepted analysis for barley as compared to the other common grains, we find the following given for crude fiber: Corn, 2.0%; wheat, 2.7; barley, 6 2, and oats, 11.0. New barley varieties today, however, are lower in fiber content than the older varieties and some hull-less varieties are even being developed. Barley and oats produced in the Pacific region, including Montana, also usually show a lower fiber content than the same grains produced in other sections.

Since we use grains primarily as a source of energy in poultry rations, we should consider the productive energy value of the grains to measure their real value. Fraps at the Texas Experiment Station has given the energy values for the various grains as follows: Corn, 1145 calories per pound; wheat, 1024; barley, 811; and oats, 760. These figures would make barley about 70% as valuable as corn from the standpoint of energy alone and 80% as valuable as wheat.

Experimental Work

What does experimental work, however, show about relative value of barley as compared to the other grains?

Work at the Montana Agricultural Experiment Station in which various grain combinations were studied in mash mixtures over a period of several years in both chicken and turkey rations for growth, egg production, hatchability and market quality showed that the combination of barley and wheat was inferior to a wheat-oats combination in only growth rate and feed efficiency to 12 weeks. Two breeds of chickens were studied, New Hampshire and S. C. White Leghorns. In both breeds the barley-wheat combination was superior to the oats-wheat combination in egg production over a 10-months period, feed efficiency for egg production, laying house mortality and also in feed efficiency to 24 weeks of age.

In a comparison of the barley-wheat ration with a more complex carbohydrate supplement mixture of corn, wheat, oats, shorts and bran, the barley-wheat mixture was equal or superior in both breeds studies to the complex mixture in average weight at 24 weeks, feed efficiency to both 12 and 24 weeks and also in mortality from 12 to 24 weeks. The complex mixture was slightly superior in egg production, mortality in layers and in per cent top market grade of broilers sold.

The studies at the Montana station with Bronze turkeys over a three-year period showed barley consistently superior to oats as a supplement to wheat in basal mash rations in promoting growth, efficiency of feed utilization, livability and in market grade. This same barley-wheat ration also proved superior to the more complex carbohydrate mixture in growth and feed efficiency to 12 weeks and in mortality to 12 weeks and from 12 to 24 weeks.

The general conclusions in these Montana comparisons were that wheat and barley made a very satisfactory carbohydrate supplement in mash mixtures for both chickens and turkeys, but especially for the latter. The amount of oats and barley used in these tests, however, was only at a 20% level of the mash mixture.

Recent Comparisons

More recent comparisons with chickens at the Montana station (unpublished results) have shown that the barley level can be increased from 20 to as high as 50% of the total ration in place of wheat for both chicks and hens without reducing growth rate or feed efficiency or increasing mortality in either New Hampshire or White Leghorn growing stock and without reducing egg production or feed efficiency in layers.

Table 1 shows the results secured in growing stock to 12 and 20 weeks of age using various levels of barley replacing an equal amount of wheat.

The percent egg production, feed efficiency and mortality on the various levels of barley in the Montana tests were as shown in Table 2.

Ninety New Hampshire hens were used in each pen to start the test and 100 Leghorn hens. The egg produc-

TABLE 1

Per cent barley in mash mixture	*Average weight at 12 weeks	*Average weight at 20 weeks	% Mortality to 12 weeks	Feed efficiency to 12 weeks
Tests With New Hampshire Chicks—				
20	2.94	4.76	**13.9	**3.74
30	2.93	4.61	4.1	3.43
40	2.87	4.69	4.1	3.54
50	2.92	4.69	4.0	3.46
Tests With White Leghorn Chicks—				
20	2.35	3.50	**35.4	**4.58
30	2.35	3.45	1.3	3.98
40	2.35	3.45	1.3	3.93
50	2.24	3.44	2.6	4.14

*Weights for pullets only.
**Most of the chicks were killed by a dog in these two pens affecting the mortality and feed efficiency figures.

TABLE 2

% Barley in all-mash ration	Results With New Hampshires (32-week test) % egg production	feed efficiency	% mortality	Results With White Leghorns (28-week test) % egg production	feed efficiency	% mortality
20	58.1	6.36	3.9	64.1	4.79	9.0
30	55.2	6.79	8.9	65.4	4.74	11.5
40	58.5	6.20	8.3	64.1	4.81	17.0
50	56.8	6.27	10.5	64.2	4.99	19.5

tion is shown on the hen-day basis. Both the White Leghorn and New Hampshire layers show a tendency to increase slightly in mortality with the higher levels of barley but neither egg production, egg size or hatchability was influenced.

Idaho Agricultural Experiment Station workers have also recently studied the value of barley when used at 0 to 63% levels in laying rations for S. C. White Leghorns and have reported that the high barley level was equal to other grain combinations, including rations in which corn supplied over one-half of the grain supplement. Egg production, egg size, body weight and feed efficiency were equally as good with the all-barley mash as with rations containing low levels of barley and high levels of corn.

A report by Peterson and Zweigart of the California Station gave results from a comparison of a high-energy ration containing corn as the only grain addition with a similar diet in which the grain portion was supplied by an equal amount (68%) of ground barley. The barley ration was fed as a regular mash and also as pellets. The two mash rations gave the same egg production over a 24-week period whereas the pelleted barley ration proved slightly more effective in promoting egg production than the corn ration in the mash form. The feed efficiency as measured by pounds of feed required to produce one dozen eggs was similar in all groups.

DOG FOOD WILD ON THE HOOF

WINNIPEG — Wild horses on the eastern slope of the Rockies are becoming a nuisance in a 100-square-mile area known as Kootenay Flats, 200 miles southwest of Edmonton, Alberta, representatives reported recently. The horses are from an abandoned herd of Percherons left during the depression, with additions from farm, ranch and Indian herds. Alberta officials are trying to get someone to round them up. Sufficient pay would be made by selling the horses for dog and mink food, it was reported.

It can be concluded from these reports that the use of high levels of barley in poultry mashes has no detrimental effects on growing or laying stock unless there is a slight increase in mortality as indicated by the Montana tests. The Idaho tests referred to did not show this mortality trend.

Addition of Fat

Does fat enhance the use of barley in high energy rations? Much work has been done with the addition of fats to high-energy type rations containing corn but very little with barley. The published reports show that the results secured from the addition of fats to rations depend upon a number of factors, including the protein level, the kind of meat scraps used (whether solvent extracted or expeller processed), the methionine and folic acid levels, the kind of fats used, sex of chickens, etc. Fats are more effective in high protein rations than in low, expeller processed meat scraps as compared to solvent extracted will also reduce the beneficial effects, males are more responsive than females, and hydrogenated fats are not effective since they are not absorbed from the intestinal tract.

A recent report was made on the use of fat as a supplement to barley in broiler rations by Arscott, Johnson and Parker of the Oregon Agriculture Experimentation Station. Their studies showed a decrease in growth rate and feed efficiency when corn was replaced by 50 and 100% barley but no effect was noticed when 25% of corn in the diet was replaced by barley. The addition of stabilized prime tallow to the corn ration did not improve growth rate and had only a slight improving effect on feed efficiency. The addition of 4 and 8% stabilized tallow to the rations in which barley replaced 25 and 50% of the corn reflected a marked improvement in feed conversion to the point where these rations compared favorably with the all-corn ration. The 100% barley ration did not compare favorably with the all-

Lime Crest Laboratory Experiments

PROVE CDP BETTER PHOSPHORUS SUPPLEMENT FOR GROWING CHICKENS

Purpose of Experiments

(1) To compare the efficiency of utilization of phosphorus in (a) 17% CDP (Coronet Defluorinated Phosphorus) and (b) ARG DCP (analytical reagent grade dicalcium phosphate) by growing chickens.

(2) To compare the quantities of fluorine in the bones of chicks that have received 17% CDP with those that have received ARG DCP

(3) To compare the quantities of both calcium and phosphorus in the bones of chicks that have received 17% CDP with those of chicks that have received ARG DCP.

Summary of Results . . .

- The phosphorus in CDP (Coronet Defluorinated Phosphate) is 108.93 ± 4.26% as available as that in ARG DCP (analytical reagent grade dicalcium phosphate, the theoretically perfect phosphatic mineral supplement produced for laboratory purposes, assumed to be 100% available).
- The chicks grew equally well to the age of three weeks and nine weeks, whether the source of the phosphorus in their diet was CDP or ARG DCP.
- The bone ash of the chicks receiving CDP was greater at both 3 and 9 weeks of age. At 9 weeks, the average difference, although small, *was* statistically significant.
- At both three and nine weeks of age, the ash of the tibias of the chicks contained much less fluorine than is commonly found in the bones of chicks.
- Neither at three weeks nor at nine weeks did the source of phosphorus have a significant effect on the calcium and phosphorus contents of the ash of the tibias of the chicks.

GUARANTEED UNIFORM ANALYSIS

Phosphorus	Calcium	Fluorine
17.0% min.	34.0% min.	0.17% max.

Further Information on These Experiments Sent Free Upon Request. Complete Report Available.

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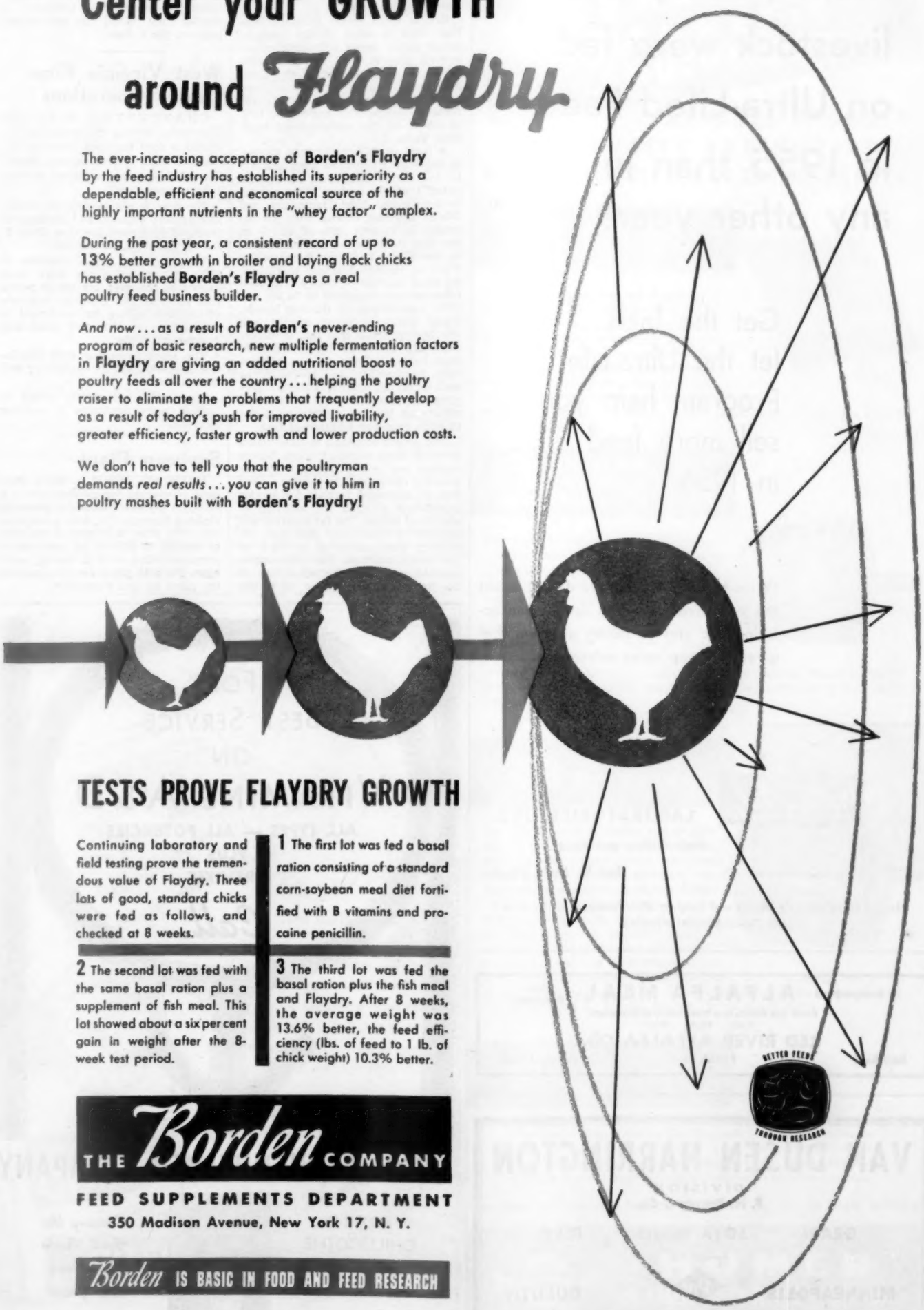

TESTS PROVE FLAYDRY GROWTH

Continuing laboratory and field testing prove the tremendous value of Flaydry. Three lots of good, standard chicks were fed as follows, and checked at 8 weeks.

1 The first lot was fed a basal ration consisting of a standard corn-soybean meal diet fortified with B vitamins and procaine penicillin.

2 The second lot was fed with the same basal ration plus a supplement of fish meal. This lot showed about a six per cent gain in weight after the 8-week test period.

3 The third lot was fed the basal ration plus the fish meal and Flaydry. After 8 weeks, the average weight was 13.6% better, the feed efficiency (lbs. of feed to 1 lb. of chick weight) 10.3% better.

THE *Borden* COMPANY

FEED SUPPLEMENTS DEPARTMENT

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TABLE 3

% fat	New Hampshire Chicks to 8 weeks: No. of birds rem.	Body weight	Feed efficiency	White Leghorn Chicks to 8 weeks: No. of birds rem.	Body weight	Feed efficiency
0	283	1.40	3.64	291	1.25	3.87
2½	279	1.59	3.61	293	1.49	3.27
5	285	1.60	3.34	292	1.60	3.39
7½	283	1.74	3.12	288	1.57	3.07

corn ration even with 4 and 8% stabilized tallow added.

Recent work at the Montana Station with growing chicks (unpublished data) shows a gradually improved growth rate and feed efficiency to eight weeks of age from adding 2½, 5 and 7½% of stabilized prime tallow to all-mash starting rations containing 50% barley and 12% of wheat as the carbohydrate base. (See Table 3.)

A total of 293 chicks was started in the New Hampshire tests and 305 in the White Leghorns. It will be noted that the results were similar in both the New Hampshire and White Leghorn chicks with an increase in growth rate of 24.3% in the New Hampshire chicks and 25.6% in the White Leghorns from adding 7½% of stabilized tallow to replace an equal amount of barley. The feed efficiency was improved by 14.3% and 22%, respectively, in the two breeds. These tests are being carried into the laying house this fall to determine the effect of fat addition to high barley rations on egg production, hatchability and mortality as well as on egg quality although previous reports show no detrimental effects on keeping quality or flavor of eggs from the addition of fats.

The results available to date would indicate that although high barley rations are very satisfactory for growing chicks and laying hens, they can be improved further for broiler production through the addition of stabilized tallow. The fat addition will improve growth rate and feed efficiency when added up to 7½% of the mash mixture. The fat supplemented mash has the advantage of an improved appearance with less dust and apparently greater palatability but mechanical problems in mixing may retard the commercial practice for a time.

West Virginia Firm Ceases Operations

CHARLESTON, W. Va.—The Charleston Milling Co., which has included a feed business, recently announced that it was ceasing operations and planning to "enter another type of operation."

The firm is abandoning its wholesale grocery business and commercial feed and corn meal business, John T. Davis, president, announced.

The company began business in 1842. "Charmco" feeds have been known in the area for many years. Five years ago the company suspended its flour milling but continued to manfacture its own corn meal and commercial feeds.

The plant is closing with liquidation of stocks, and the machinery will be removed.

Mr. Davis said efforts would be "aimed more profitably in another direction."

Soybean Plant

HALSTAD, MINN. — Plans have been announced for construction of a $200,000 soybean processing plant by Halstad Elevator Co., Inc., a cooperative. The plant will have a capacity of 400,000 to 500,000 bu. soybeans a year, according to O. E. Bervig, manager. He said plans are to complete the plant by late November.

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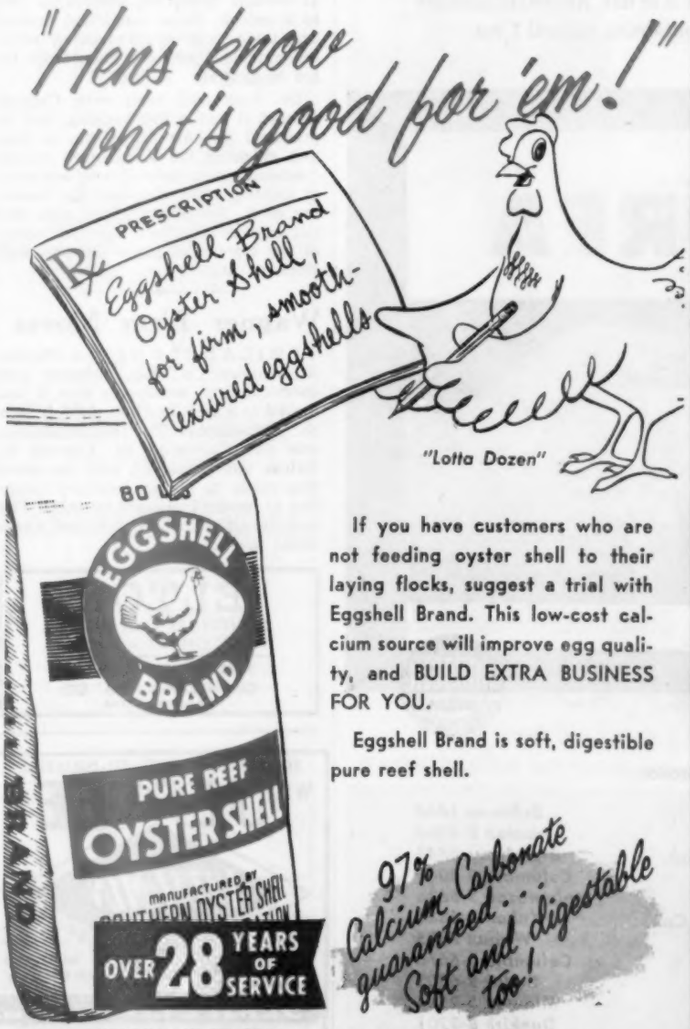
"I don't care if she has been eating laying mash, it's still impossible!"

Illinois Dairy Day

URBANA, ILL.—The University of Illinois' annual Dairy Day is scheduled for Sept. 6. Among the displays will be exhibits dealing with green chopping, reproduction as affected by nutritional level, preventing milk fever, a record system for dairymen, what happens to feed in the digestive system, and a feeding test with milk cows which included various diets.



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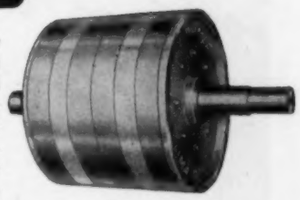

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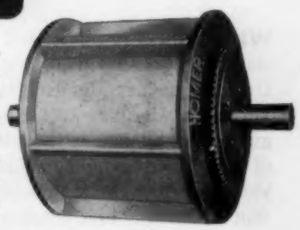

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DEPT. 165 • LIMA, OHIO

Cattle Feeders May Use Sound Waves To Measure Finish

FORT COLLINS, COLO.—Feedlot operators may some day use high-frequency sound waves to measure finish on their cattle. Scientists with the Colorado Agricultural Experiment Station have been experimenting with the process. Work is still in preliminary stages, but the researchers have been encouraged enough to continue their studies.

The Colorado research is aimed at developing an accurate way to measure condition of feedlot cattle. If such a method can be perfected, the feeder could ship his cattle with assurance that they had reached a desired grade, but had not been held on feed beyond that point. He could thus save considerable feed. An accurate measure before slaughter would also help the feeder narrow down finish variation.

High-frequency tests have been used on 25 yearling steers and 35 yearling heifers in Colorado. Dr. H. H. Stonaker, animal husbandman with the Colorado A&M Experiment Station, says the tests have been fairly accurate, but still too time-consuming for wide use.

"We are definitely encouraged with our results to date," says Dr. Stonaker, "but need to do a lot more work in speeding up our tests and refining them for greater accuracy. We hope to have more conclusive results sometime next year."

Tests proving most accurate so far were made by shaving 2-in. squares over the last right rib, 7 in. from the vertebral column. Measurements are made by using an ultrasonic device called a somascope, developed by Dr. Douglas Howry of the University of Colorado Medical School. Sound waves are emitted from a crystal, and the time it takes for an "echo" to return is recorded as a linear distance. The "echo" is returned when the sound waves strike the lean tissue below the fat layer.

Arkansas Station Issues Dairy Bulletins

FAYETTEVILLE, ARK.—Two new bulletins relating to dairy cattle have been released by the University of Arkansas' Agricultural Experiment Station. They discuss various roughages for wintering dairy heifers and the length of the gestation period in dairy breeds.

The first publication, Bulletin 577, reports on feeding trials from 1952 through 1956 with Holstein-Friesian and Jersey heifers. Roughages fed these cattle included Korean lespedeza hay, red clover hay, oat hay, cottonseed hulls and German millet hay. In one trial, urea was fed as a protein substitute.

The authors say several roughages or combinations of roughages can be used satisfactorily for wintering dairy heifers, provided they are properly supplemented.

One trial was a 59-day feeding trial using urea as a protein substitute with alfalfa-timothy hay. The heifers receiving a concentrate mix in which urea was substituted for one-third of the protein equivalent produced gains of 1.27 lb., while heifers receiving all cottonseed meal as the protein source gained 1.25 lb. The researchers said the results indicated that when feed prices compare to those in the trial, urea can be used economically to replace protein in grain mixtures for dairy heifers 5 to 11 months of age.

The other publication reports on an investigation into the relation between the length of the gestation period and such factors as breed, age of dam, sex of calf, birth weight of calf, season of the year and heritability. The mean gestation lengths for the four breeds studied were 276.6 days for Holstein-Friesian, 278.9 days for Jersey, 283.0 days for Guernsey, and 288.3 days for Brown Swiss. Male calves were carried an average of 1.1 days longer than female calves. There was a significant correlation between gestation length and birth weight of calf in the Holstein and Jersey breeds.

The two publications are available free of charge from the Bulletin Office, Agricultural Experiment Station, University of Arkansas, Fayetteville. Ask for Bulletin 577, "The Feeding Value of Certain Roughages for Wintering Dairy Cattle," and/or Bulletin 576, "The Duration of Gestation in Dairy Cattle."

Treated Corn Not Toxic in Illinois Test

URBANA, ILL.—The University of Illinois says a test at its College of Veterinary Medicine indicates that corn treated with the fungicide Captan is not harmful as feed for pigs or chickens.

Dr. R. P. Link said the experiment was conducted because surplus supplies of seed grains, treated to protect them against fungus in the soil at seeding time, are sometimes fed to livestock. Some fungicidal agents are toxic, and grain treated with recommended amounts should not be fed to animals.

Dr. Link said tests with Captan showed it has a low toxicity, and it produced no harmful effects in pigs and chickens fed a balanced ration containing corn treated with amounts of Captan ordinarily used for treating seed. Treatment of the corn did not appear to affect nutritive value or the amount of grain the pigs and chickens ate.

Wagner Firm Moves

PHILADELPHIA — Charles A. Wagner Co., Inc., mineral and chemical firm, announces that it has moved to a new location, 4455 N. 6th St., Philadelphia. The former address was 813 Callowhill St. Edward C. Rabon, vice president, said the move was made to obtain enlarged facilities to handle increased business. The new facilities include enlarged warehouse space.

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Meat Scraps, Tankage Output at Record High

WASHINGTON—Meat scraps and tankage production in the first six months of 1956 reached a record total of nearly 563,000 tons, according to the U.S. Department of Agriculture. This is about 12% more than the combined tonnage produced in the first half of 1955 and 2% more than in the last half of 1955.

Sharply increased production of meat scraps totaling 15% more than the January-June, 1955, period accounted for most of the increase over last year's output. The six months' total of over 459,000 tons of meat scraps exceeds any previous half year of record and includes sizeable increases over 1955 for each month. Tankage production, however, increased only about 1% above the 1955 level.

Crops Better

SAN FRANCISCO—Hay and grain crops in northern Nevada are giving much better yield this summer than during 1955, according to a report received by the California Wool Growers Assn. Better supplies of irrigation water are mainly responsible for the improved prospects, said W. P. Wing, secretary of the association. However, in southern Nevada, crops have been short because of the drouth condition and a heavy infestation of the alfalfa aphid in some sections. Prospects for feed continuing ample into fall and winter are good in northern Nevada, but prospects are poor in the southern area.

Beacon Names Agency

NEW YORK—The Beacon Milling Co., Inc., Cayuga, N.Y., has announced the appointment of John Mather Lupton Co., Inc., 420 Lexington Ave., New York 17, N.Y., as its advertising agency, effective Nov. 1, 1956. Beacon manufactures a complete line of poultry, dairy and other livestock feeds.

NEW GRAIN ELEVATOR

WINNEBAGO, MINN. — Completion of the new $50,000 grain elevator here for the Farmers Elevator Co. is expected in time to handle new crop grain. The addition will give the company an added 75,000 bu. bin capacity, bringing total capacity to 240,000 bu.

Minneapolis Futures Assn. Elects Officers

MINNEAPOLIS — Robert L. Searles, grain broker, has been reelected president of the Futures Assn. of the Minneapolis Grain Exchange for a one-year term. He has served for the past two years.

Lewis H. Workman, Archer-Daniels-Midland Co., was reelected secretary-treasurer.

The association also proposed the names of Mr. Searles and Norman P. Ness, International Milling Co., to the exchange's committee on nominations as futures representatives on the exchange board of directors.

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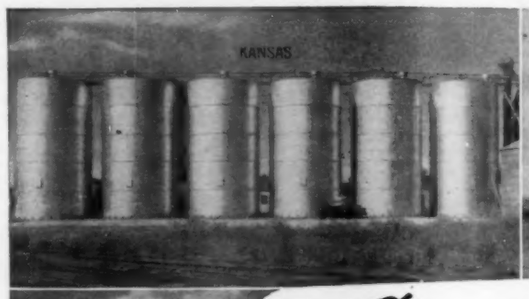

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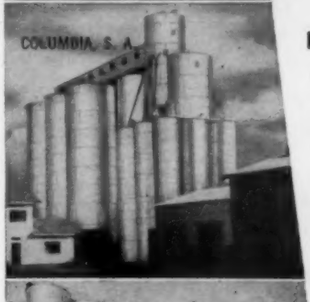
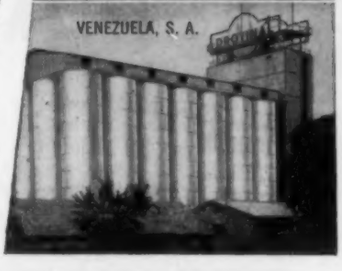
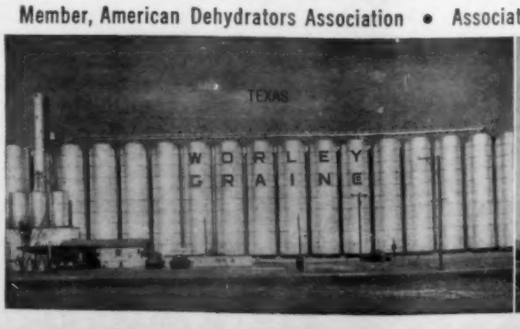
Hundreds of BS&B installations like those shown here attest to the fact that BS&B Bolted Steel Grain Tanks have *earned* the Confidence of grain and feed men everywhere — both in this country and abroad. Next time, buy BS&B...and find out *why!*

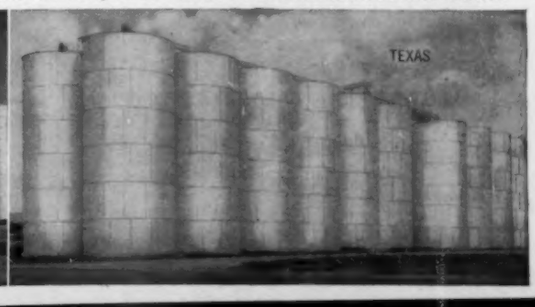


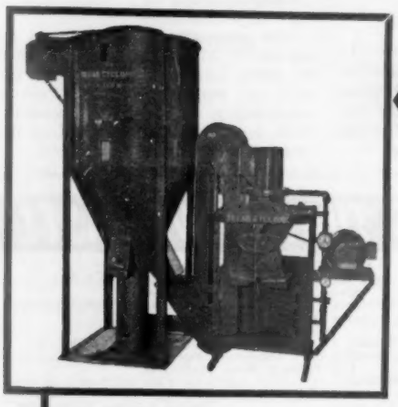


OVER 60 YEARS
BS&B
ANOTHER EXAMPLE OF PRODUCT LEADERSHIP

BLACK, SIVALLS & BRYSON, INC.
7500 East 12th St. — Agricultural Division, Dept. 10-AK8 — Kansas City 26, Mo.
Member, American Dehydrators Association • Associate Member, Grain and Feed Dealers National Association







BIGGER SWEET FEED PROFITS

TEXAS CYCLONE

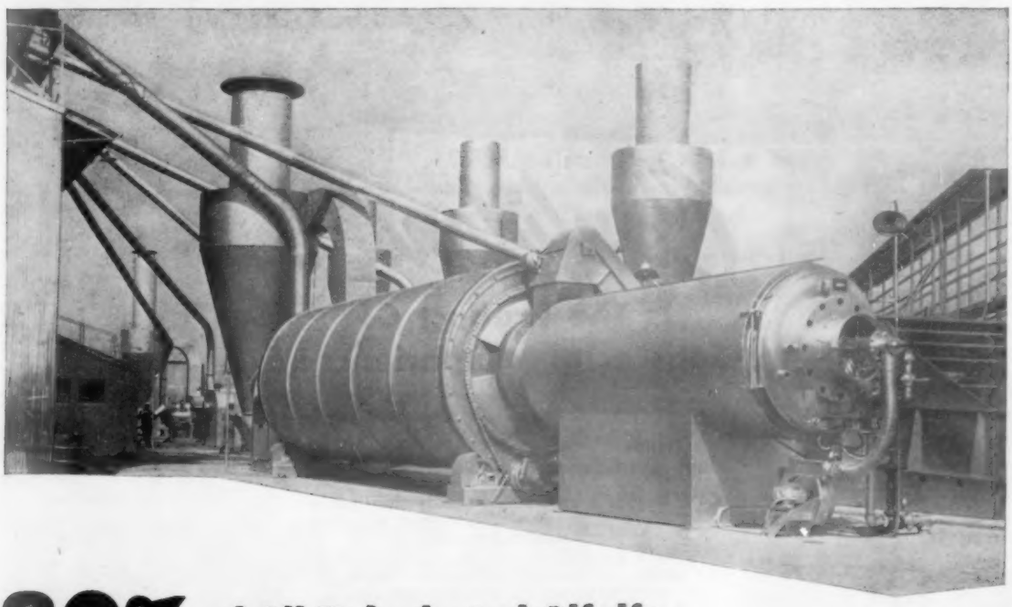
feed mixing units were made to work as a team—or to fit in with existing facilities. Shown here is the TEXAS CYCLONE FEED MIXER in combination with the TEXAS CYCLONE SWEET FEED MIXER—the finest mixing combination you can find. Molasses mixing is made easier and better with a patented spray process that insures blending. Write for free description folder.

SIMPLE TO OPERATE
EASY TO MAINTAIN

That's what users say about Texas Cyclone. Simple in design. Few moving parts. Low upkeep. Hundreds in use for many years.

NORWOOD MANUFACTURING COMPANY
MINERAL WELLS TEXAS

GRAIN CONVEYOR—The Mikco Grain Co., Cairo, Ill., has installed this 228-ft. Armco conveyor housing to transport grain from its river loading house to barges on the Mississippi and Ohio Rivers. The housing consists of 48-in. diameter galvanized corrugated half-round sections supported by 58 bands. The loading house has a capacity of 80,000 bu. of grain with unloading facilities that will permit an entire trailer to dump at once. The barge unloading conveyor can unload 14,000 bu. an hour.



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is produced in ARDRIER Dehydrators

Why are Ardrier Dehydrators preferred throughout the industry for alfalfa and other products?

Exclusive three-pass drum provides three-stage drying in a single, compact unit.

Compound flights on both surfaces of inner and intermediate drums provide . . . ideal exposure of product to drying medium . . . increased capacity . . . reduced outlet air temperature . . . reduced fuel consumption per ton of water evaporated . . . elimination of surging within the drum . . . assurance of highest quality and maximum uniformity in moisture and color.

1956 models have the further advantages of . . . improved furnace for oil, gas or combination fuels . . . electric controls . . . gas electric-ignition . . . improved one-piece drum drive with heavy-duty drive chain . . . unit-driven conveyor.

Let us know the products you're interested in drying, and we'll help you to do it most efficiently.

WRITE, WIRE, or CALL The HEIL Co., Milwaukee

ARD-61

APPLICATIONS OF
ARDRIER Dehydrators

Antibiotic Residues	Garbage Tankage
Apple Pomace	Grain By-products
Beet Pulp	Humus
Brewers' Grains	Leafy Drug Plants
Canning Company By-products	Packing House By-products
Carrots	Potatoes, Sweet and White
Cattle Manure	Poultry Manure
Citrus Waste	Sages
Composts	Sawdust
Cooked Blood	Sludges, Vacuum-filtered
Corn Cob Meal	Sugar Cane Bagasse
Crab Scrap	Tomato Pomace
Distillers' Grains	Wet Corn Miller's By-products
Feathers	Wood By-products
Fish Meal	

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THE HEIL CO.
for
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Chemists Sponsor Education Program

WASHINGTON, D.C. — A nationwide education program designed to encourage more of America's youth to follow a career in science has been announced by the Manufacturing Chemists' Association, Inc.

General John E. Hull (USA ret.) MCA president, said the program for a five-year period will cost an estimated $1,000,000 and will include work at elementary, high school, and college levels.

In commenting on the reasons for the new program General Hull said the MCA science education program has three stated objectives:

1. To inspire qualified students to follow science as a career.
2. To assist educators through the development of science-teaching aids and "curriculum enrichment" materials.
3. To aid and encourage science teachers and education administrators toward the goal of increasing their numbers, their effectiveness, and their prestige.

Oregon Dealers Set Convention Dates

PORTLAND, ORE.—The 26th annual convention of the Oregon Feed & Seed Dealers Assn. has been scheduled for March 15-16, 1957, in the Multnomah Hotel in Portland.

Russ Hays, Lewis Bldg., Portland 4, is manager of the association.

BUILDING ELEVATOR

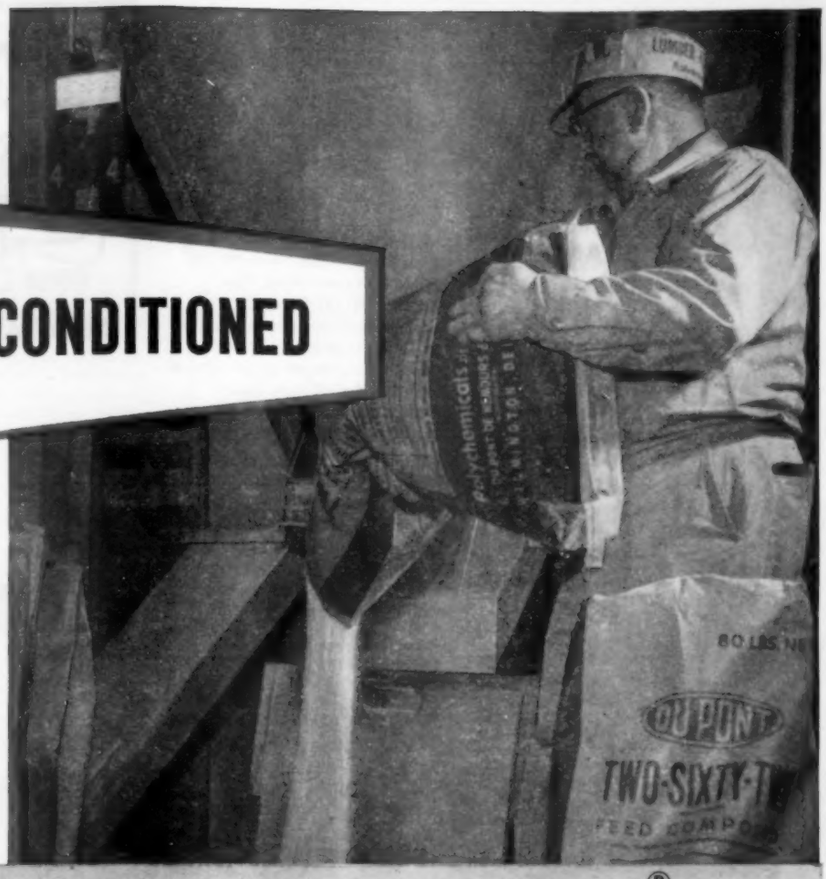
GREENWOOD, MISS.—Work has started on a grain elevator here for Myrick Grain Elevator Co., Inc. The elevator, with a capacity of 15,000 bu., is expected to be ready to receive soybeans and other grains grown in this area in four to six weeks.

OLD PROCESS SOYBEAN MEAL and CAKE
45% Protein—5% Natural Fat
GUARANTEED
No adulterations • Clean
Nutritious • Palatable • Fragrant
A Dependable Supply
Truckloads or Cars
COSHOCTON FARMERS EXCHANGE COMPANY
Coshocton, Ohio

ESPECIALLY CONDITIONED

...for easier handling

...uniform mixing



DUPONT TWO-SIXTY-TWO®

FEED COMPOUND

FREE-FLOWING: You can depend on the anti-caking agent in "Two-Sixty-Two" to keep it in excellent free-flowing condition.

As the first and finest urea source of protein, "Two-Sixty-Two" assures you consistent performance in feed-mixing operations. In supplements for cattle and sheep it improves roughage digestion in addition to being a valuable source of protein. Rumen bacteria, stimulated by "Two-Sixty-Two," do a more efficient job of breaking down feed fibers and unlocking feed nutrients.

Agents for "Two-Sixty-Two" are located in key cities (listed below) to provide fast service. They can also offer valuable assistance when you're planning new feeds based on the nutritional soundness and practical economy of urea. Their help is backed by Du Pont's 18 years of intensive work in the field of ruminant feeding.

FOR SERVICE or information, phone or write your nearest agent, or contact a Du Pont office.

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Van Waters & Rogers, Inc.
16th & Carolina Street
San Francisco 19
1422 E. 6th St., Los Angeles 21

IDAHO
Van Waters & Rogers, Inc.
P. O. Box 1663, Boise

IOWA
Carroll Swanson Sales Co.
620 Des Moines Bldg., Des Moines

MASSACHUSETTS
Grandone, Inc., Needham

MINNESOTA
Agricultural Services, Inc.
402 Flour Exchange Bldg.
Minneapolis

MISSOURI
Bertels & Shores Chemical Co.
1400 St. Louis Ave., Kansas City 7

NEW YORK
Sunset Feed & Grain Co.
805 Dun Bldg., Buffalo 2

NORTH CAROLINA
Harris-Crane, Inc.
221 S. Church Street
Charlotte

OHIO
Davis Enterprises, Inc.
919 S. Perry Street
Dayton 1

OREGON
Van Waters & Rogers, Inc.
3950 N. W. Yeon Avenue
Portland 10

PENNSYLVANIA
P. R. Markley, Inc.
Lafayette Bldg.
Philadelphia 6

TENNESSEE
Pless & Shehan
P. O. Box 2654, Memphis 2

R. D. Erwin Co.
638 Third National Bank Bldg.
Nashville 3

TEXAS
Van Waters & Rogers, Inc.
10216 Denton Road, Dallas 9

UTAH
Van Waters & Rogers, Inc.
650 W. 8th South, Salt Lake City

WASHINGTON
Van Waters & Rogers, Inc.
4000 First Avenue South
Seattle 4

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La Budde Feed & Grain Co.
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Your customers look to PILOT BRAND

PILOT OYSTER SHELL

OYSTER SHELL for TOP egg production

Wise poultry raisers always keep their hoppers filled with PILOT BRAND Oyster Shell. That's because PILOT BRAND is a perfect, tried-and-proved eggshell material. It definitely helps to maintain maximum production of stronger-shelled eggs. And it costs just about a nickel a year per hen.

Nationally-advertised on 70 radio stations and in leading farm and poultry journals, PILOT BRAND is the largest-selling eggshell material in the world. It's a real money-maker and business-builder for dealers who display it, promote it.

Order from your distributor . . . or write to us

PILOT BRAND OYSTER SHELL For Poultry

Oyster Shell Products Corporation

New Rochelle, N. Y. St. Louis 9, Mo.

If you are planning AERATION Write or phone AMERICAN TODAY!

The Latest In
• EQUIPMENT
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• LAY-OUT SERVICE

For storage bins or buildings of any size or shape.

Features of American Aeration Systems

- Round perforated steel ducts are smooth inside.
- Varying diameter duct sizes to fit your needs.
- High pressure fans to handle any job.
- Rugged and strong—built to last.
- Simple design—easy to install.
- Low per bushel cost.
- Prompt service.

MAIL TODAY or phone us at Crystal Lake, Ill. 1820

AMERICAN CROP DRYING EQUIP. CO.
CRYSTAL LAKE, ILL.

The complete line of crop drying equipment.

Dept. FS

Send me FREE Aeration data

NAME_____

RFD_____

TOWN_____ STATE_____

RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Study of Net Profits

Feed and grain men may wish to compare their operations with the averages of five Ohio country elevator operators whose net profits were the highest of 119 plants studied in an Ohio State University survey. The highest net profits were realized by plants which had large volumes of both grain and supplies. However, these were not the largest operations, as measured in volume. The average total sales of the five plants were $1,199,062, whereas the average volume for the top volume group was $1,307,620. Volume of each of the five plants was over $1 million, however. Total dollar volume, margins and costs appear to determine net profits, the survey report shows. A few plants which had comparable dollar volumes to the select five had very small net profits and a few had losses.

Operating Statement Average for Five Ohio Elevators Handling Feed, Grain, Fertilizer andl Other Farm Supplies—Highest Net Profit Group of 119 Plants Survey by Ohio University

Item	Sales	Margin	% Margin
Wheat	$ 158,166	$ 7,215	4.6
Corn	300,433	9,782	3.2
Soybeans	345,590	22,998	6.7
Oats	34,867	3,240	9.3
Seed	18,131	2,379	13.1
Miscellaneous	1,389	85	6.1
Total farm product	**$ 888,576**	**$45,699**	**5.3**
Feed	$ 130,941	$16,326	12.5
Merchandise	57,980	7,491	12.9
Fertilizer	56,219	5,040	9.0
Coal	23,507	3,465	14.7
Petroleum products	34,028	6,161	18.1
Machinery and parts	15,282	4,529	29.6
Hardware	3,275	408	12.4
Fence and posts	12,733	1,842	14.5
Twine	2,050	24	0.1
Tile	690	101	14.7
Paint	1,202	237	19.7
Salt	706	143	20.3
Cement	1,872	405	21.6
Total farm supply	**$ 340,485**	**$46,172**	**13.6**
Total sales	**$1,199,061**	**$91,871**	**7.7**
Trucking	$ 2,721	$ 2,721	
Shelling, grinding	9,297	9,297	
Miscellaneous	734	734	
Cleaning, treating	117	117	
Storage	3,049	3,049	
Drying	2,196	2,196	
Shop	1,350	1,350	% of Sales
Total other operating	**$ 19,464**	**$ 19,464**	**1.60**
Total sales, margin	**$1,218,526**	**$111,335**	**9.14**

Item		% of Sales
Gross operating income	$111,335	9.14
Operating expense:		
Salaries and labor	$40,043	3.29
Trucking	4,150	.34
Power	2,996	.25
Plant repairs	2,645	.22
Plant supply	320	.03
Payroll tax	512	.04
County and state tax	2,042	.17
Insurance	3,332	.27
Office and postage	960	.08
Professional service	189	.02
Telephone and telegraph	406	.03
Directors' fees	207	.02
Travel and meetings	485	.04
Advertising	730	.05
Miscellaneous	526	.04
Total cash expense	$59,543	4.89
Depreciation allowed	5,759	.47
Bad debt allowance	321	.03
Total operating expense	$65,623	5.39
Net operating income	$45,712	3.75
Interest and dividends received	$ 1,456	
Patronage and discount received	5,273	
Rent received	111	
Cash adjustment	116	
Gain on asset sales	161	
Total non-operating income	$ 7,117	.58
Interest expense	$ 154	
Loss on asset sales	100	
Total non-operating expense	**$ 254**	**.02**
Net income	**$52,575**	**4.31**

50% Lack Systems

One feed merchandising authority states that 50% of midwest feed dealers do not have a bookkeeping system adequate enough to tell exactly what their expenses and profits are at the end of the year. Few businesses prosper and expand without a good set of records. If they do, it is simply by "guess and by golly."

WISCONSIN DEALER

(Continued from page 40)

tomers, and Mr. Theune is getting an opportunity to talk better feeding with many of the farmers.

But how about the sizable feed store and mill in north Sheboygan? Well, Mrs. Anna Theune, J. O. Theune's mother, manages that while he is gone. A capable man also runs the feed mill, for some farmers still like to haul their own grain in to be ground and mixed according to formula.

Between the stationary mill and the mobile unit, Badger Hatchery is getting more grinding and mixing business, and is also selling more feeds—which is the main objective.

Mrs. Theune, a vigorous, keen eyed business-woman, reports that she and her son are not hatching any chicks this year. They are using all their energies toward getting the mobile unit business well organized. Next year, she thinks, they will also resume the hatching of chicks on a sizable scale. She thinks, too, that the Badger Hatchery business then will be pretty well stabilized to meet modern merchandising conditions.

Live Displays

The Theunes really take advantage of many opportunities to merchandise feed. There are always one or more live displays in the roomy store, just about every month. When the writer called, a fine calf was growing in a sizable pen near the office, and in a front window good-sized pullets were feeding.

Once a year the Theunes usually give away a calf in a calf promotion. For this event they rent the large Turner Hall downtown and usually plan to a capacity house of farmers and their families. Mrs. Theune says she thinks this type of promotion is a fine thing, and says it sells a lot of feed.

"When we have a calf on display in the store showroom and farmers can see it feeding, they come up, look at the animal and feel its bones and muscles," she says. "They are usually surprised at how well the calf is formed and is growing. By feeling the calf they know this is so. They know it must be the feed and the management which is responsible, and so this helps us sell feed. We like these live displays, for they get farmers thinking about better feed programs."

Fine Displays

There is a fine display of poultry equipment, too, and the entire retail store is kept neat and orderly. There are numerous wall shelves filled with merchandise, and also some floor displays of considerable note. The Theunes like to get extra sales from chick and feed customers, and they know from experience that good, clean displays help to get the plus sales.

The Theunes also cooperate with other dealers in an area radio and newspaper advertising campaign occasionally. The dealers also exhibit cooperatively at the Sheboygan County Fair which gives them an opportunity to meet many farmers of the region. At this fair, four dealers have exhibits in a special tent, where they are able to meet and entertain many farmers at one time. Usually, too, the dealers have some live displays at this tent exhibit.

"The feed dealer today needs to take advantage of every promising advertising and merchandising opportunity within his means, if he wants to attain a profitable volume," says Mrs. Theune. "We investigate every opportunity we can, and use those which seem suited to our business."

Eshelman Opens New Plant at Vinton

LANCASTER, PA.—A new custom feed mixing plant has been opened by John W. Eshelman & Sons at Vinton, Va. This plant, formerly the Vinton Flour & Feed Mill, has been completely re-built and modernized with new grinding, mixing and molasses blendnig equipment. Prior to purchase of the mill at Vinton, the Eshelman firm maintained a warehouse in nearby Roanoke, Va.

A grand opening of the new plant, attended by more than 300 persons, was held recently. Plant manager is Floyd Boitnott, who previously managed the Roanoke warehouse.

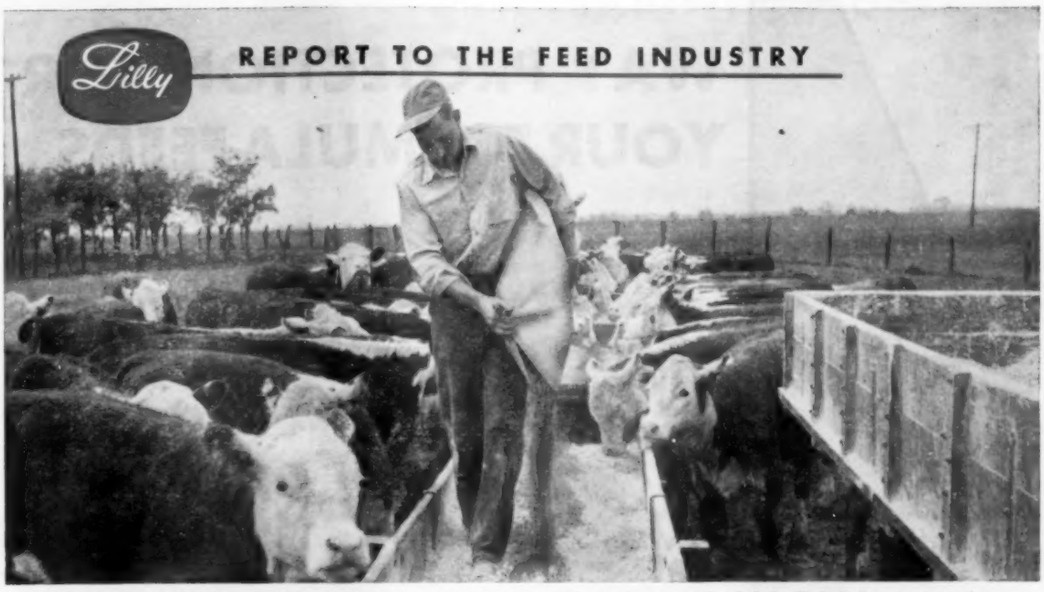
The new plant will serve farmers locally at Vinton and in the surrounding areas of Roanoke and Bedford Counties.

$100,000 FIRE LOSS

ILLIOPOLIS, ILL.—Lightning was blamed for the fire which swept through half of the DeKalb Agricultural Assn. warehouse here, causing damage estimated at $100,000. Some 30,000 bu. seed corn and 150 tons baled hay and straw were destroyed. A fire wall prevented the blaze from spreading to the other half of the 500 ft. long building.

DOGS GO FOR FOODS CONTAINING
WARD'S KIBBLED PRODUCTS
Makes Any Good Dog Food Better
WARD FEED CO. GLEN ELLYN, ILL.
A FULL LINE OF INGREDIENTS for ALL TYPES OF DOG, FOX and MINK FOODS

Lilly REPORT TO THE FEED INDUSTRY



"The things I look for from my feed manufacturer are a quality feed plus help on new developments—and they do a good job of delivering both to me." Longmeyer likes to use at least 2 pounds of protein supplement per head daily. "I do it because my gains are better that way. I've tried to cut down but don't have much luck. Gains fall off and the cost of gain goes up," Longmeyer said.

Sons give dad early tip-off on 'Stilbosol'

by Eugene S. Hahnel

Search for information is a constant state of mind for Henry Longmeyer, who farms 700 productive acres near Greenfield, Ill.

Typical of Henry is the way he listened to his college student sons, Ralph and Albert, for every possible piece of news on the latest money-making, cost-cutting practices.

When his boys told him about successful experiments with 'Stilbosol'-fortified supplements, Henry put in his order . . . long before such supplements were available. When the first shipment arrived from his feed manufacturer, Longmeyer didn't hesitate to feed it to all his cattle. "I couldn't have afforded a check lot because of the gains I've been getting with 'Stilbosol,'" was Henry's quick comment.

Overhead bins store the grain which flows by gravity directly into his feed wagon at a pull on a lever. Longmeyer uses a hammer mill to grind his own corn and cob meal, which is then blown into an overhead bin.

Mr. Longmeyer has already fed 2,000 cattle 'Stilbosol'-fortified supplement. On one group of 187 head, he got an average daily gain of 3.2 lbs. at a cost of 19.3¢ per lb. of gain. "Best daily gains I ever had," reported Longmeyer.

Henry and his feed manufacturer's representative, Joe Powell, (right) look over Longmeyer's high-gallonage watering tank. Longmeyer's story will be read by cattle feeders in Lilly ads in 15 farm magazines.

Lilly products for the feed industry
PROCAINE-PENICILLIN-G
CALCIUM PANTOTHENATE
VITAMIN B_{12}
'STILBOSOL'

'Stilbosol' is sold only to the feed manufacturing industry.

Stilbosol
(Diethylstilbestrol Premix, Lilly)
Lilly

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U.S. Patent No. 2751303.

ELI LILLY AND COMPANY, AGRICULTURAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

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The original vitamin E in feed ingredients may be gone by the time you mix your feeds. That's one reason why you should use

Myvamix
VITAMIN E
FEED SUPPLEMENT

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DPi

Distillation Products Industries
is a division of
Eastman Kodak Company

The Story of Dehulled Soybean Oil Meal

By Fred H. Hafner

EDITOR'S NOTE: While dehulled soybean oil meal has been produced for a number of years it is only quite recently that it gained market prominence. The reason: emphasis on high energy rations in modern feeds. In the accompanying article Mr. Hafner describes the product, some of the problems encountered in manufacturing it, its uses and his appraisal of its future in feed formulation. Mr. Hafner, director of soybean oil meal sales for General Mills, Inc., is a member of the Soybean Research Council of the National Soybean Processors Assn.

Nearly 6½ million tons of soybean oil meal will be produced domestically during the crop year ending Sept. 30, 1956. Twenty-five years ago, production was practically nil. In the interim there were two outstanding developments within the soybean industry that contributed measurably to the rapid expansion of production: (1) the introduction of the solvent extraction process in 1934 and (2) the introduction of toasting about 1938.

Toasted extracted soybean oil meal, commonly referred to as 44% protein extracted soybean oil meal, began to be used widely by the feed industry in 1942 shortly after the start of World War II and is now recognized by feed authorities everywhere in the U.S. as an economical source of high quality protein. Over 95% of the soybean oil meal produced is used in animal feeds of one kind or another. Nearly 5½ million tons of soybean oil meal were fed to animals last year.

Recently, another outstanding development was recorded which, like the previous two, should result in increased use of soybean oil meal in the feeds of the future. This latest development was the introduction of toasted dehulled extracted soybean oil meal, commonly referred to as 50% protein dehulled soybean oil meal. This product, which has been on the market for about 10 years, has only recently come into its own as a result of the widespread publicity given to certain types of high energy, low fiber feeds for critical animals.

The Association of American Feed Control Officials has published an official definition for 50% protein dehulled soybean oil meal in their 1956 manual. The definition is essentially as follows:

"Dehulled solvent extracted soybean oil meal is the product obtained after extracting most of the oil from dehulled soybeans by cracking, heating, flaking and use of solvents. After extraction of the oil the product is cooked and ground. It shall not contain more than 3% crude fiber and shall be designated and sold according to its protein content."

Since issuing this definition, action has been taken to eliminate from the definition the words "solvent extracted" so that the current accepted definition throughout the trade is 50% protein dehulled soybean oil meal.

Specifications Listed

Standard specifications for 50% protein dehulled soybean oil meal are published in the 1956 issue of the Trading Rules of the National Soybean Processors Assn. They are as follows:

Protein	Minimum	50.0%
Fat	Minimum	0.5%
Fiber (when shipped by seller) ..	Maximum	3.0%
N.F.E..	Minimum	27.0%
Moisture (when shipped by seller)	Maximum	12.0%

The manufacture of 50% protein dehulled soybean oil meal is a relatively simple process but involves the application of technical knowhow that ofttimes is available via the "experience route" only. To produce dehulled soybean oil meal one must merely remove the outer coating (hull) of the soybean and process the dehulled soybeans much in the same manner as one proceeds to make 44% protein extracted soybean oil meal. But experience has taught us that there is far more to the process than meets the eye.

Some of the problems encountered are:

Soybeans won't dehull: The hull adheres very closely to the meat or cotyledon portion of the soybean and resists removal. This necessitates a special tempering operation to create a moisture differential between the meat and hull portions of the soybean

4 WAY PROTECTION FOR YOUR FORMULA FEEDS...

USE HARDY TRACE MINERAL SALT with Hardy sta-mix

A combination of *four additives* that protect your feeds in *four ways*. The exact composition and proportion depend upon the particular Trace Mineral Formula.

GUARANTEED ANALYSIS OF HARDY TRACE MINERAL SALT

FORMULA No. 1	
Manganese	0.455%
Iodine	0.011%
Cobalt	0.010%
Iron	0.165%
Copper	0.048%
Sulphur (as Sulphates)	0.300%
Salt	97.000%
FORMULA No. 2	
Manganese	1.370%
Iodine	0.022%
Cobalt	0.013%
Iron	0.330%
Copper	0.048%
Zinc	0.006%
Salt	97.000%

Both Formulae also available with Iodine and Manganese only.

1 **Prevents Segregation of Trace Minerals** . . . Stops uneven distribution of Trace Minerals in your formula feeds. Production tests from salt plant to finished feeds prove Sta-Mix superiority.

2 **Iodine Stability Maintained** . . . Sta-Mix rejects moisture and oxidation — the deadly enemies of Iodine stability . . . Gives you a mixing salt with a *guaranteed* stable Iodine content. Will not add or attract moisture to the finished feed.

3 **An Anti-Caking Agent** . . . Because of its ability to reject moisture, Sta-Mix prevents salt caking . . . maintains free flowing and proper mixing qualities at all times.

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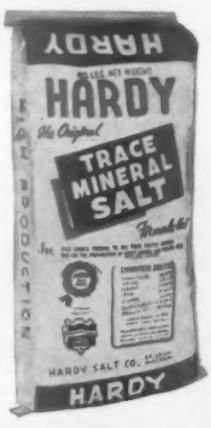

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so that the hull will "pop" when the whole soybean hits the cracking rolls. Unless this portion of the process is working smoothly the entire operation will fail.

Soybeans not uniform in size: Soybeans vary in size to a far greater extent than most people are aware. Small soybeans tend to "sneak" through the cracking rolls without releasing their hulls if the preponderance of soybeans passing through the rolls are large. If the percentage of small soybeans is relatively high, attempts to reduce the fiber content of the meal to 3% or less ofttimes prove futile. In such instances the soybeans may have to be sized and only the larger soybeans used in the production of dehulled soybean oil meal. This would require extra handling and storage charges that are not incurred in the production of 44% protein meal.

Soybeans low in protein: Many of the soybeans that are produced are high in oil content and low in protein content. Removal of the entire hull from these soybeans usually yields a dehulled meal which conforms to the fiber maximum (3%) but fails to meet the protein minimum (50%) at the 12% moisture level. This necessitates a reduction of the moisture content of the product and even then the protein guarantee may not be met. To deliberately go into the market and buy high protein soybeans is unwise with oil selling at four times meal. Therefore, the only alternative for processors with protein deficiency problems is segregation of incoming soybeans if segregated storage is available. This can be a costly operation.

Loss of oil bearing material: In order to meet the fiber guarantee of 3% maximum, a highly efficient dehulling operation is necessary. During the aspiration of the hulls from the cracked soybean meats, oil bearing material in the form of cracked bean meats and pulverized cotyledon is carried over along with the hulls. Unless the major portion of this oil bearing material is recovered, the efficiency of the dehulling operation is offset by loss of oil in the hull stream. Pure hulls themselves contain very little oil—about .5% ether extractable material.

To lick all these problems and turn out a really high quality 50% protein dehulled soybean oil meal requires an alert production crew plus investment in a lot of expensive equipment not required for production of 44% protein meal.

Faces Problem

There is one more problem the processor faces which is really a tough one—where to dispose of his soybean hulls! The soybean industry is well aware of this problem and realizes that the success of the dehulled meal program is dependent upon the development of satisfactory markets for the hull portion of the soybean. I am confident such markets do exist and that sizeable tonnage outlets for this high fiber product will be found soon. Meanwhile soybean millfeed is being sold in competition with screenings and other high fiber products for use in range cattle and dairy cattle feeds. This use is likely to expand in time. (Soybean millfeed by definition consists of a mixture of soybean hulls and tailings from the mill in the manufacture of soybean oil meal.)

Up until 1954 there were only two or three processors offering 50% protein dehulled soybean oil meal. These were located east of the Mississippi River. During the past two years production has been expanded and at last count there were at least seven processors producing dehulled meal east of the Mississippi and three processors west of the river. Additional processors will be in production by the end of the year. As production is increased and availability of the product expanded, usage is expected to increase.

Fifty percent protein dehulled soybean oil meal differs sufficiently from 44% protein extracted soybean oil meal to deserve recognition as an entirely new ingredient. The dehulled product contains none of the harsh fibrous coating that is present in the 44% protein meal. The full significance of this can be gathered from a study of the data presented in table No. 1. This table shows that 44% protein extracted soybean oil meal, containing a normal content of hulls as provided by nature, is a mixture of approximately 91% of dehulled meal and 9% of soybean millfeed.

Table 1
Effect of Addition of Soybean Millfeed on Protein and Fiber Content of 50% Protein Dehulled Soybean Oil Meal

% Soybean millfeed added	Protein, %	Fiber, %
None	50.0	2.5
1	49.6	2.9
2	49.2	3.3
3	48.8	3.7
4	48.4	4.1
5	48.0	4.5
6	47.6	4.9
7	47.2	5.3
8	46.8	5.7
*9	46.4	6.1
10	46.0	6.5
11	45.6	6.9

The addition of each 1% of soybean millfeed decreases the protein content approximately 0.4% and increases the fiber content approximately 0.4%.
*Approximate content of soybean millfeed in 44% protein extracted soybean oil meal. Analysis of meal product will vary depending on protein content of soybeans, moisture content of meal and oil content of meal.

Differences Noted

A comparison of the analysis of 50% protein dehulled soybean oil meal and soybean hulls reveals some outstanding differences:

	50% Protein dehulled SBOM	Soybean hulls
Protein, %	50.0-52.0	8.0-10
Fiber, %	2.5- 3.0	35.0-40.0
Fat, %	1.0- 2.0	0.5- 1.0

Soybean hulls are low in protein content. Moreover, the protein contained in the hulls is only partially available to non-ruminant animals in that it is closely associated with non-digestible fiber. The fiber portion of soybean hulls is principally cellulose, pentosans and lignin. None of these can be utilized by chickens, turkeys, pigs or dogs. In fact, there is no nutritional justification for having soybean hulls present in the feeds for these critical animals. In some cases there is no economic justification for adding hulls per se or as a fraction of 44% protein extracted soybean oil meal to certain types of animal feeds although this does not hold true for all poultry and livestock feeds at the current differential for 50% protein dehulled meal.

The most prevalent use of 50% protein dehulled soybean oil meal is in high quality feeds for broilers where performance is the criteria. In building feeds that are low in indigestible nutrients (crude fiber) and with an optimum calorie-protein (CP) ratio, 50% protein dehulled meal has proven to be highly adaptable. Some feeds of this type have been formulated to contain as much as 25% of dehulled soybean oil meal, but there is evidence that this percentage can be increased by supplementing the feed with methionine and replacing additional high cost animal and fish proteins.

Other uses for 50% protein dehulled

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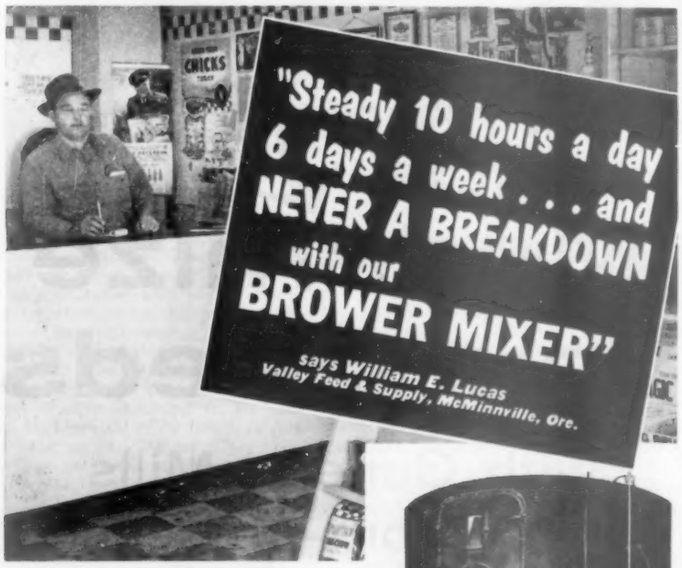
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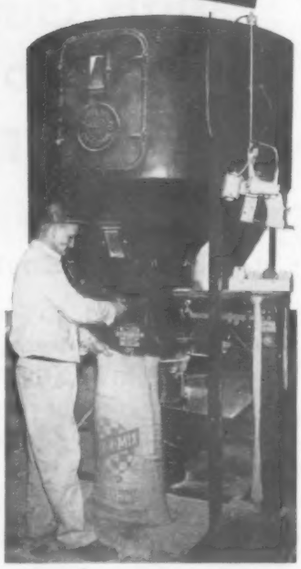

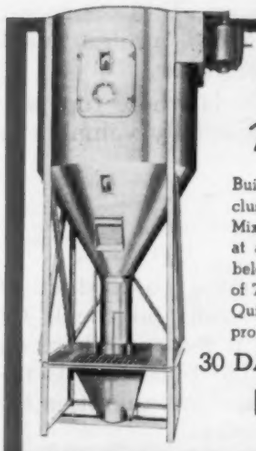

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soybean oil meal are in chick starters, turkey starters, feeds for caged layers, pig starters, dog foods and in some poultry growing mashes. In areas where freight rates are high, feed manufacturers are using the dehulled product in ruminant feeds, preferring to pay freight on protein and buy fiber locally at substantial discounts.

As availability of 50% protein dehulled soybean oil meal is expanded and the differential over 44% protein meal stabilized in the $8@10 range, the use of this product in animal feeds should also expand.

The product known as 50% protein dehulled soybean oil meal is the near-ultimate in what the soybean industry can produce from soybeans in the way of a high quality vegetable protein. There are some further refinements of a mechanical nature that can be made but they are minor—and vary by areas of usage. Supplementation of 50% protein dehulled soybean oil meal with methionine yields a protein of higher quality for critical animals than the unsupplemented meal. But this is a function of the feed manufacturer and it should be his prerogative to determine whether methionine supplementation is needed or not.

NEW ELEVATORS

PORTLAND, ORE.—One of the earliest grain harvest seasons in years in Polk County will find four new elevators at various parts of the county to receive the crop. Frank Neufeld has just completed a 1,600-ton elevator on his farm east of Dallas. A large elevator has been erected at McCoy by Freeman Bros., and a third has gone up at Perrydale where Ed and Bob Scharf are owners. Pacific Grains, Inc., which built a large plant at Derry Station last year, has added a smaller elevator at Suver in the southern part of the county.

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MICRO-INGREDIENTS IN FEED SUPPLEMENTS

(Continued from page 32)

of the entire feed manufacturing operation in continuous line plants until free flow is restored.

Conditioning Agents

It is generally possible to minimize or eliminate this problem by the appropriate selection of diluents. However, many ingredients are inherently hygroscopic and must be used in this condition. In such formulations, it is possible to minimize caking greatly by the incorporation of low levels of suitable conditioning agents such as tricalcium phosphate.

The trend today in poultry and other types of feeds is toward the use of more pelleted, crumbled and cubed rations. The use of feed products in these forms results in less waste, increased feed consumption and added insurance that the animals are obtaining a more completely uniform ration.

Pelleting Adds Stress

However, each of these processes results in an added stress on the active ingredients, due to the high temperatures and moistures imposed during the steaming, compression and extrusion steps. While certain forms of antibiotics and vitamins are known to be satisfactorily stable in feed blends, they may exhibit severe potency loss during the pelleting and cubing. For this reason, the active ingredient must be processed to resist these severe conditions.

Since it is often difficult to predict from laboratory tests the performance during pelleting of an active ingredient, it is generally necessary to conduct commercial-scale pelleting runs to obtain this information using standard feed manufacturing equipment.

While the color of a feed supplement is not generally of great importance, it is desirable to maintain uniformity from batch to batch. If this is not done, the feed manufacturer may receive the impression that the production is not uniform throughout the year. When one considers the small percentage of active ingredient in a feed supplement, it will be readily realized that slight unavoidable color changes are the result of variations in the appearance of one or more of the diluents employed.

Palatability of Supplement

It is also of utmost importance to consider the palatability of the feed supplement when incorporated into the finished feed. Such properties as extreme dustiness, extreme coarseness, off-odors and flavors, may render the finished feed somewhat unpalatable to the animal. This feature is of added importance in the so-called "high level" feeds which are in widespread use today for the prevention and treatment of various diseases of poultry and livestock. Sick animals have been known to refuse medicated feeds which are unpalatable and this can obviously result in a high mortality loss for the raiser.

A further consideration in the selection of diluents for food supplements is insect infestation. While this is not a problem in mineral carriers, one must select vegetable source diluents with extreme care to avoid this problem. Without proper safeguards, it is relatively easy to introduce infestation to feed supplement processors and from there, in turn, to the feed manufacturer.

This problem has been eliminated by the careful selection of diluents and rigid inspection of all incoming materials intended for use in feed supplement manufacturing.

ECONOMICS

When one considers the very low ratio by weight of active ingredients contained in most feed supplements, the desirability of holding diluent costs to a minimum becomes apparent. While the obvious solution would be selection of low-cost ingredients, it is obvious that the many factors discussed above render this an impossibility.

Seasonal variations in the availability of certain ingredients will have a marked effect on diluent cost, as it is not always possible to purchase and stock a large quantity of a specific ingredient. Consequently, the supplement formulation often must be modified to include mainly those ingredients which are in good supply throughout the year.

Combination Problems

We have pointed out in the preceding discussion the necessity for employing combinations of ingredients in order to obtain desirable feed supplement properties as regards bulk density, flow, etc. Use of such combinations poses a serious problem for the supplement manufacturer if a specific diluent should become unavailable for one reason or another.

In the absence of one or more critical ingredients, the properties of the supplement may become unaccept-

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Choline and Riboflavin Found to Have Effect on Water Metabolism

Choline and riboflavin are necessary for maintaining normal water metabolism in animals, according to the report of researchers. Experimental animals on diets deficient in either choline or riboflavin showed impaired kidney function under stress.

Further research on the effect of nutritional deficiencies on water metabolism may be of significance in the poultry field. It has been suggested previously that retention of water in the tissues may be a factor in causing breast blisters in chickens.

Methionine Necessary For Maintaining Healthy Respiratory Tissue

Experimental diets deficient in methionine and lysine have been found to produce disturbances in the bronchial tissues of animals, according to recent research conducted in Europe. Examination showed that the elastic layer of the bronchii was destroyed when rations deficient in these two amino acids were fed.

Degeneration in the respiratory tract caused by methionine and lysine deficiencies may indicate a relationship between prevalence of respiratory diseases in poultry and inadequate amino acid content in rations.

Use of Antioxidant BHT Grows as Emphasis on Pigmentation in Poultry Continues

U.S.I. To Make Available Supplies of BHT on Natural Carrier

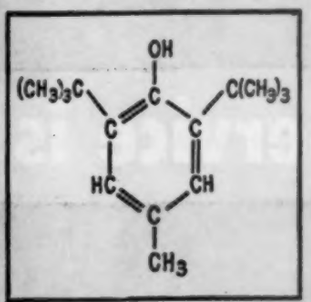
Butylated hydroxy toluene (BHT) is playing an important part in the rapidly expanding use of antioxidants in feeds. The ability of BHT to increase the utilization of the yellow carotenoid pigments, including xanthophyll, is of especial value to the poultry industry, which continues to place a premium on birds with good skin and shank color.

In view of the growing importance of BHT to the feed industry, U.S.I. has announced that it will supply an antioxidant mixture containing 25% BHT on a natural carrier of distillers dried grains.

Prevents Loss of Vitamins A and E

In addition to improving pigmentation in poultry, BHT also helps prevent loss of such vitamins as A and E. Deficiencies of vitamin E can result in encephalomalacia, or "crazy chick" disease. Vitamin A is necessary for good growth and resistance to disease.

By stabilizing the natural oils present in rations, BHT also serves to protect the palatability of feeds. About ¼ to ½ lbs. of BHT or 1 to 2 lbs. of antioxidant mix containing 25% BHT are used per ton of feed. The addition of BHT to animal feeds follows several years of its successful use as an antioxidant in foods for human consumption.



Structural formula for butylated hydroxy toluene (BHT). It is a white, crystalline, free-flowing antioxidant, soluble in fats, oils and some alcohols. BHT is also known as:

- *2,6 ditertiary-butyl-4-methylphenol*
- *2,6 ditertiary-butyl-paracresol (dbpc)*

U.S.I. Product Has Natural Base

The BHT to be marketed by U.S.I. is a dry, free flowing product on a natural carrier of distillers dried grains, which supplies a portion of the B vitamins required by livestock and poultry. The mix will be packaged in 50 lb. paper bags and will be available soon in U.S.I. warehouses across the country. For information, contact your nearest U.S.I. office.

Vitamin B_{12} Increases Carotene Utilization

The addition of vitamin B_{12} to diets otherwise low in B_{12} has been found to increase significantly the utilization of carotene in experimental animals.

Carotene is known to be a precursor of vitamin A, and in the case of poultry, favorably affects pigmentation in the bird.

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able to the feed manufacturer. It is therefore generally necessary to develop alternate formulations which can be used in the event that one or more ingredients in the standard formulation become unavailable.

With the improvement in the efficiency of feed mixing, and the increasing use of feed adjuvants, many manufacturers are beginning to turn to the use of high potency supplements which they premix in their own equipment using diluents readily available.

This practice offers the advantages of volume prices on the active ingredient. As a result, many large scale feed manufacturers are now purchasing various active ingredients in more concentrated form and then premixing and blending in their own plants. On the other hand, there are many medium- and small-size feed manufacturers who prefer the convenience of purchasing a lower potency feed supplement which is ready for use in batch mixes without the necessity of further dilution.

QUALITY CONTROL

Test Methods—The finished antibiotic feed supplement is assayed for antibiotic content by microbiological methods employing turbidimetric or cup plate methods. High potency supplements may be assayed by chemical and physical methods such as colorimetry and optical rotation.

Over-all particle size is checked via standard screen analysis, and microscopic examination quickly indicates respective physical characteristics of both active ingredient and diluents. Diluent ratios are indicated by proximate analyses for protein, fat, fiber, ash, moisture, bulk density, etc.

Uniformity is checked by vibrating samples for several hours and assaying top and bottom layers. Caking tendencies and hygroscopicity are measured by determining the rate of moisture pick-up by thin layers of sample exposed to circulating air at fixed humidity and temperature. The pH, flow properties and dustiness are also compared.

Stability Data—Feed supplements are sometimes in storage for 6 to 12 months before incorporation in feeds. Hence the first test is to determine active ingredient stability in the undiluted feed supplement. Storage at normal room temperature in moisture-proof containers is employed to simulate warehouse conditions. Detailed tests are also required to eliminate the possibility of any incompatibility with other commonly employed feed additives, or with essential nutrients.

Stability Tests

Stability tests under actual use conditions in commercial feed products are highly important to demonstrate satisfactory performance to the feed manufacturer. In this phase of the stability program, small-scale laboratory tests are replaced by plant scale batches processed in commercial feed manufacturing equipment. All major types of feed products and processes must be studied thoroughly in a continuous testing program. Only in this way can reliable data be obtained on which to base meaningful recommendations for use.

Overage Required—Since the use conditions to which the feed supplements will be subjected can seldom be accurately predicted, it is always desirable to incorporate a suitable overage. The level of this overage will be governed by a variety of factors.

One of these, for example, is the precision of the assay method employed for quality control purposes. If assay reproducibility is only ± 5%, it will be necessary to adjust the level of active ingredient accordingly. In addition, if the efficiency of the blending equipment used for producing the feed supplement is not sufficiently high, it will be necessary to add a small overage to compensate for possible non-uniformity.

Storage Time a Factor

However, one of the major considerations in determining the overage level is the estimated storage time of the supplement before use. This includes not only the period during which the supplement is stored in a manufacturer's warehouse but also how long the supplement will be stored after purchase by the customer. Data on this aspect can be obtained fairly readily by routine shelf storage studies on the undiluted supplements at varying temperatures in the laboratory.

A second important criterion is the type of product into which the feed supplement is to be mixed. If it is to be included in a product high in minerals or drugs and low in moisture, stability of active ingredients will differ from what they would be if final use is in pelleted broiler rations or in high-molasses cattle supplements.

Sufficient data on stability under actual use conditions must be obtained in commercially prepared feed stored under actual use conditions of temperature, moisture, humidity, etc. Only after all of these studies have been completed is it possible to interpret the data and arrive at a safe and reasonable level for overage of the active ingredient.

SUMMARY:

In the preceding discussion, we have highlighted some of the important questions associated with the formulation of antibiotics and other micro-ingredients Into acceptable feed supplements. There are undoubtedly many additional factors peculiar to specific products and specific applications which have not been covered. However, the above outline may suffice to illustrate the extreme care which is necessary in developing an acceptable feed supplement for use by the feed industry.

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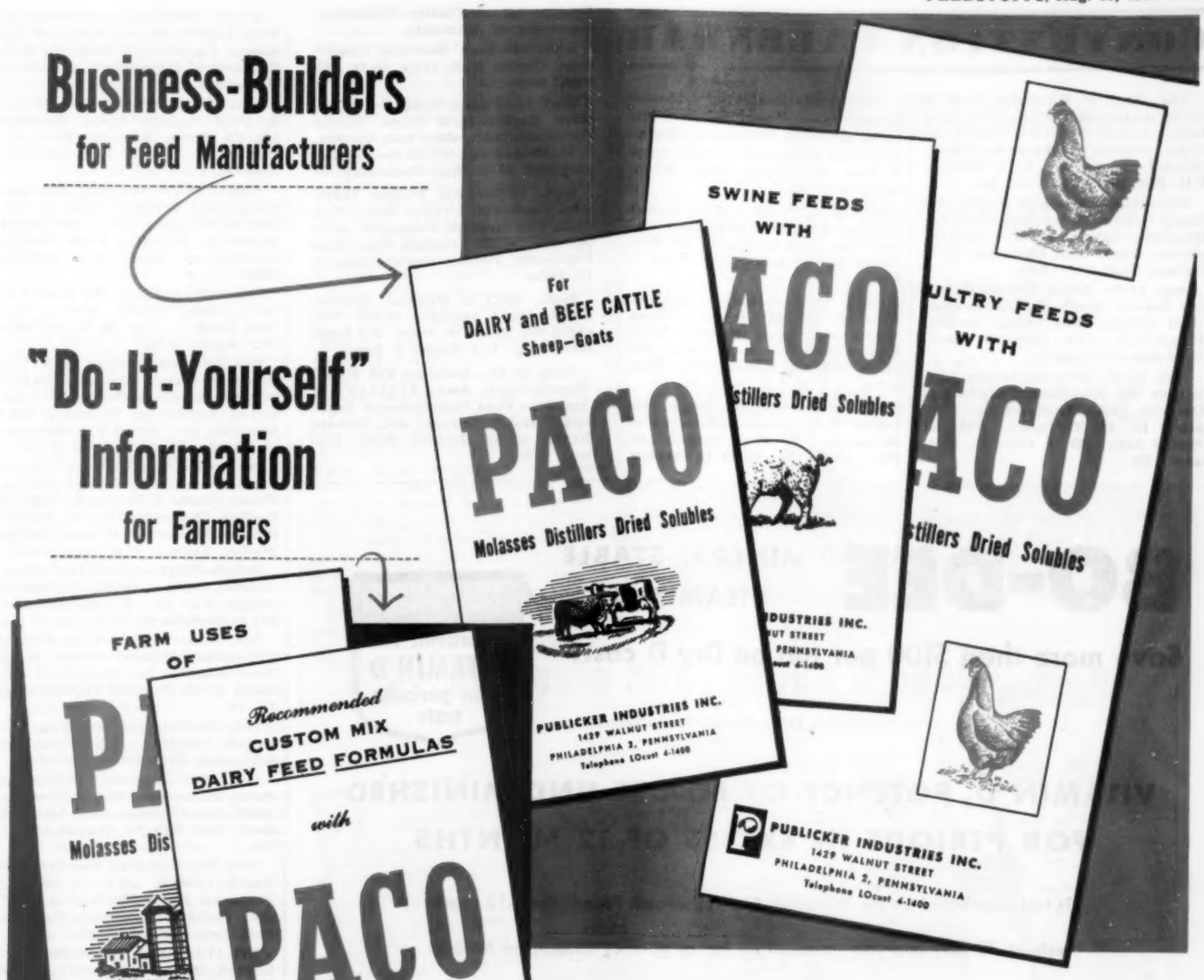

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CONVENTION CALENDAR

Aug. 20-21 — Kentucky Feed & Grain Assn. and University of Kentucky Animal Nutrition Conference (joint meeting); Sheraton-Seelbach Hotel, Louisville; sec., W. C. Willock, P.O. Box 1914, Louisville, Ky.

Aug. 21-22—Oklahoma Poultry Industry Get-Together; Biltmore Hotel, Oklahoma City; chm., Don L. Brooks, poultry department, Oklahoma A&M College, Stillwater, Okla.

Aug. 21-24—North Dakota Hatchery School; North Dakota Agricultural College, State College Station, Fargo, N.D.; chm., Irving J. Mork, extension poultryman.

Aug. 27-29—National Broiler Convention and All-Industry Exposition; Claypool Hotel, Indianapolis, Ind.; pres., H. H. Earthman, National Broiler Assn., 155 W. First St., Elmhurst, Ill.

Sept. 6—National Feeder Finance Credit Group; Breezy Point, Pelican Lake, Brainerd, Minn.; sec., Rubert Lindholm, Minneapolis Assn. of Credit Men, 502 Thorpe Bldg., Minneapolis 2, Minn.

Sept. 9-11—Grain & Feed Dealers National Assn.; Morrison Hotel, Chicago; sec., John C. Bowden, 100 Merchants Exchange Bldg., St. Louis 2, Mo.

Sept. 10-11 — Seventh Regional Area of National Renderers Assn. annual meeting; Muehlebach Hotel, Kansas City; sec., H. A. Yaffee, Box 26, Stockyards Station, Sioux City, Iowa.

Sept. 10-11—Minnesota Animal Nutrition Short Course; University of Minnesota, St. Paul Campus, St. Paul; chmn., Dr. Elton L. Johnson, Department of Poultry Husbandry, University of Minnesota.

Sept. 14—Iowa Nutrition Conference, Curtiss Hall, Iowa State College, Ames.

Sept. 14—Purdue Swine Day; Livestock Experimental Farm, Purdue University, Lafayette, Inc.; co-chm., J. H. Conrad and W. M. Beeson, Department of Animal Husbandry.

Sept. 19-20—Ohio Poultry Industries Conference; Youth Bldg., Ohio State Fair Grounds, Columbus; sponsor, Ohio Poultry Council, Ohio State University, Poultry Dept., Columbus 10, Ohio.

Sept. 19-21 — National Mineral Feeds Assn.; Sheraton Hotel, Chicago; sec. Peter W. Janss, 212 Equitable Bldg., Des Moines 9, Iowa.

Sept. 20-21—American Pet Food Manufacturers Assn., division of American Feed Manufacturers Assn.; Drake Hotel, Chicago; sec., Richard Kathe, 53 W. Jackson Blvd., Chicago 4, Ill.

Sept. 20-21—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; chmn., Dr. E. L. Stephenson, Department of Animal Husbandry.

Sept. 23-25—Pennsylvania Millers & Feed Dealers Assn.; Abraham Lincoln Hotel, Reading, Pa.; sec., Richard I. Ammon, P.O. Box 329, Ephrata, Pa.

Sept. 26-27—Michigan Hatchery Conference; Michigan State University, East Lansing, Mich.; sec., Harry Hathaway, Michigan State Poultry Improvement Assn., East Lansing, Mich.

Oct. 1-3—National Renderers Assn.; Hotel Statler, Boston; sec., Miss Jamie C. Fox, 30 N. La Salle St., Chicago 2, Ill.

Oct. 2-4—Northeastern Poultry Producers Council exposition and convention; Onondaga County War Memorial Auditorium, Syracuse, N.Y.; managing dir., Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

Oct. 8—Virginia State Feed Assn.; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 9-10—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Oct. 12—Nebraska Nutrition Conference; University of Nebraska, Lincoln; chm., Prof. William Loeffel.

Oct. 15-16—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno; sec., John Gilmore, 1400 10th St., Sacramento 14, Cal.

Oct. 17—Animal Nutrition Research Council, annual meeting, Shoreham Hotel, Washington, D.C.; sec., Maxwell L. Cooley, Hoffman-Taff, Inc., Springfield, Mo.

Oct. 17-18—Assn. of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, U. of Md., College Park, Md.

Oct. 18-19—Michigan Feed & Grain Conference; Kellogg Center, Michigan State University, East Lansing; sec.-treas., John A. Krusoe, Box 472, East Lansing, Mich.

Oct. 25-26 — Oklahoma Formula Feed Conference; Oklahoma A&M College, Stillwater, Okla.; co-chm., Dr. Magnar Ronning and Dr. William Kirkham.

Nov. 2—Ohio Animal Nutrition Conference; Ohio State University, Columbus, Ohio.; chm., W. J. Tyznik, Department of Animal Science.

Nov. 8-9—Cornell Nutrition Conference for Feed Manufacturers;

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Nov. 8-9—Florida Nutrition Conference; University of Florida Agricultural Experiment Station, Gainesville; John P. Feaster, University of Florida, Gainesville.

Nov. 12-13—Missouri Feed Conference; Memorial Union Bldg., University of Missouri, Columbia; chmn., Dr. W. H. Pfander, Mumford Hall, University of Missouri, Columbia, Mo.

Nov. 14-15—Illinois Feed Assn. and Illinois Poultry Improvement Assn., joint meeting; Armory, Leland Hotel (IFA) and St. Nicholas Hotel (IPIA), Springfield, Ill.; sec., IFA, Dean M. Clark, Board of Trade Bldg., Chicago, Ill.; sec., IPIA, Aubrey Harless, Box 91, Shelbyville, Ill.

Nov. 16—School for Poultry Servicemen in Feed and Allied Industries; College of Agriculture, Rutgers University, New Brunswick, N.J.; chm., C. S. Platt, Poultry Department.

Nov. 19-20—Western Grain & Feed Assn.; Fort Des Moines Hotel, Des Moines, Iowa; exec. sec., Mark G. Thornburg, 928 Des Moines Bldg., Des Moines 9, Iowa.

Nov. 23-24 — American Society of Animal Production; Hotel Sherman, Chicago; sec., W. M. Beeson, Dept. of Animal Husbandry, Purdue University, Lafayette, Ind.

Nov. 26-27—American Corn Millers Federation; Drake Hotel, Chicago; sec., Harry Hunter, 173 W. Madison St., Chicago 2, Ill.

Dec. 3-4—Farmers Elevator Assn. of South Dakota; Huron, S.D.; sec., C. C. Anderson, 423 Citizens Bldg., Aberdeen, S.D.

Dec. 3-5—Midwest Feed Production School, Muehlebach Hotel, Kansas City, Mo.; sponsored by Midwest Feed Manufacturers Assn., Lloyd S. Larson, executive vice president, 20 W. 9th St. Bldg., Kansas City, Mo.

Dec. 6-7—Washington Animal Industry Conference; Western Washington Experiment Station, Puyallup, Wash.

Dec. 6-7—North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh, N.C.; chm., George Wise, Animal Nutrition Section, North Carolina State College, Raleigh, N.C.

1957

Jan. 7-8—Kansas Formula Feed Conference, Kansas State College, Manhattan; chmn., F. W. Atkeson, head of department of dairy husbandry, Kansas State College, Manhattan.

Jan. 8-10—National Turkey Federation, Cincinnati, Ohio; exec. sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 11-12—Kansas Seed Dealers Assn.; Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

Jan. 20-22—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

Jan. 23-24 — Massachusetts Dairy Farmers Seminar; University of Massachusetts, Amherst, Mass.

Jan. 28-30—Southeastern Poultry & Egg Assn.; Dinkler-Plaza Hotel, Atlanta; exec. sec., J. Paul Williams, 615 E. Franklin St., Richmond 19, Va.

Jan. 30-Feb. 2—American Dehydrators Assn., Edgewater Gulf Hotel, Edgewater Park, Miss.; exec. vice pres., Joseph Chrisman, 430 Board of Trade Bldg., Kansas City, Mo.

Jan. 31-Feb. 1—University of New Hampshire Poultry Health Conference; University of New Hampshire, Durham, N.H.; chm., Prof. W. C. Skoglund, Poultry Dept.

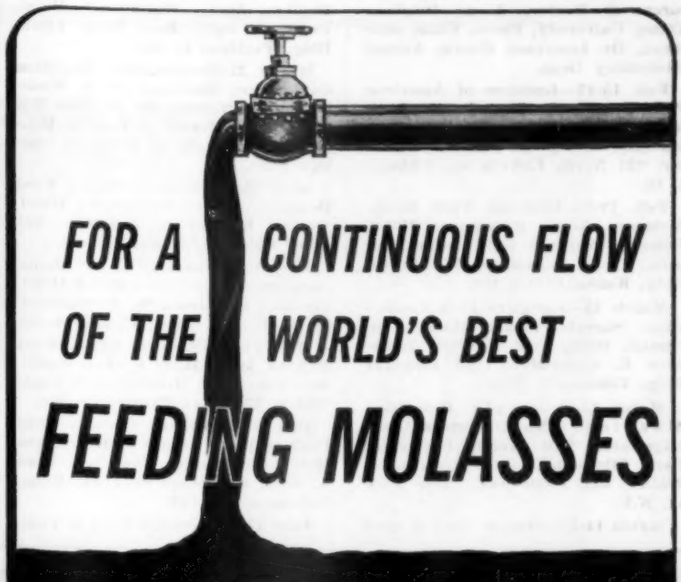
Feb. 4-6—Assn. of Southern Agricultural Workers, Birmingham, Ala.

Feb. 7-8—Oregon Animal Industry Conference; Oregon State College, Corvallis; chm., Dr. J. R. Parker.

Feb. 10-12—Wyoming Grain, Feed & Seed Dealers Assn.; Casper; sec., Everett L. Berry, P.O. Box 118, Sheridan, Wyo.

Feb. 14-15—Washington State Feed Assn.; Olympic Hotel, Seattle; sec., J. G. Wilson, 814 Second Ave. Bldg., Seattle 4, Wash.

Feb. 14-15—Utah Feed Manufac-



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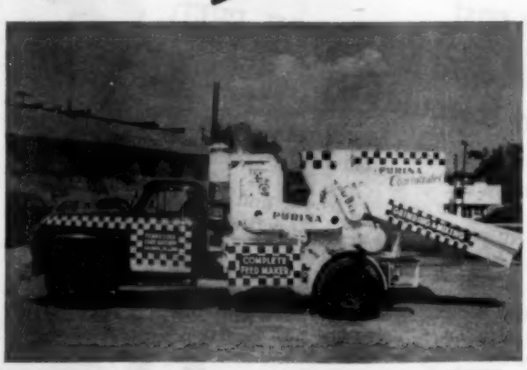

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- Unique molasses handling system.

New Model Jay Bee Portable Feedmaker

"The Complete Feed Mill on Wheels"

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turers & Dealers Assn.; Brigham Young University, Provo, Utah; sec.-treas., Dr. Lawrence Morris, Animal Husbandry Dept.

Feb. 15-17—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; pres., Cliff D. Carpenter, 221 North LaSalle St., Chicago 1, Ill.

Feb. 17-19—Midwest Feed Manufacturers Assn., Broadmoor Hotel, Colorado Springs, Colo.; exec. vice pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

March 13—Distillers Feed Conference; Sheraton-Gibson Hotel, Cincinnati, Ohio; exec. director, Lawrence E. Carpenter, 1232 Enquirer Bldg., Cincinnati, Ohio.

March 13-17—Grain Processing Machinery Manufacturers Assn.; Edgewater Gulf Hotel, Edgewater Park, Mississippi; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

March 14-15—Oregon Feed & Seed Dealers Assn., Multnomah Hotel, Portland; mgr., Russ Hays, Lewis Bldg., Portland 4, Ore.

March 21-22—Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. G. Lynn Romoser, Department of Poultry Husbandry, University of Maryland, College Park, Md.

April 25-27—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita, Kansas; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 1-3—American Feed Manufacturers Assn.; Conrad Hilton Hotel, Chicago; sec.-treas., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

May 19-20—Missouri Grain, Feed & Seed Assn., Hotel Connor, Joplin, Mo.; sec., D. A. Meinershagen, Eagle Mill & Elevator, Higginsville, Mo.

June 9-11—Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4, Ind.

June 17-18—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

Expansion Planned

VINELAND, N.J.—A broad expansion program of manufacturing facilities, amounting to $50,000, has been mapped here by the Keen Mfg. Corp., designer and builder of poultry equipment. According to Everett M. Keen, president of the firm, some 10,000 sq. ft. of additional production space will be added to the plant. The new section will house, among other apparatus, a forming machine that will turn galvanized steel into feed hoppers.

FEED FIRM INCORPORATES

BATON ROUGE, LA.—Mid-State Milling Corp., Alexandria, La., has been granted a charter to deal in agricultural feeds. Capitalization of $225,000 was authorized.

JOINS ALBERS—Jerry Denbo, right, new assistant advertising manager of the feeds division, Albers Milling Co., is welcomed to the Carnation-Albers world headquarters in Los Angeles by Robert D. Moore, advertising manager of the feeds division. Mr. Denbo is a graduate of the University of Illinois in advertising design. In 1951 he joined Honeggers' & Co., Inc., in Fairbury, Ill. In May, 1955, he resigned from the position of advertising manager there to become vice president and general manager of the Record Advertising Agency in Fairbury, handling the Honeggers' account.

3 Grange Wholesale Units Plan to Merge

PORTLAND, ORE. — Merger of Grange wholesale organizations in Oregon, Washington and Idaho to create a three-state Grange supply cooperative is reportedly taking shape.

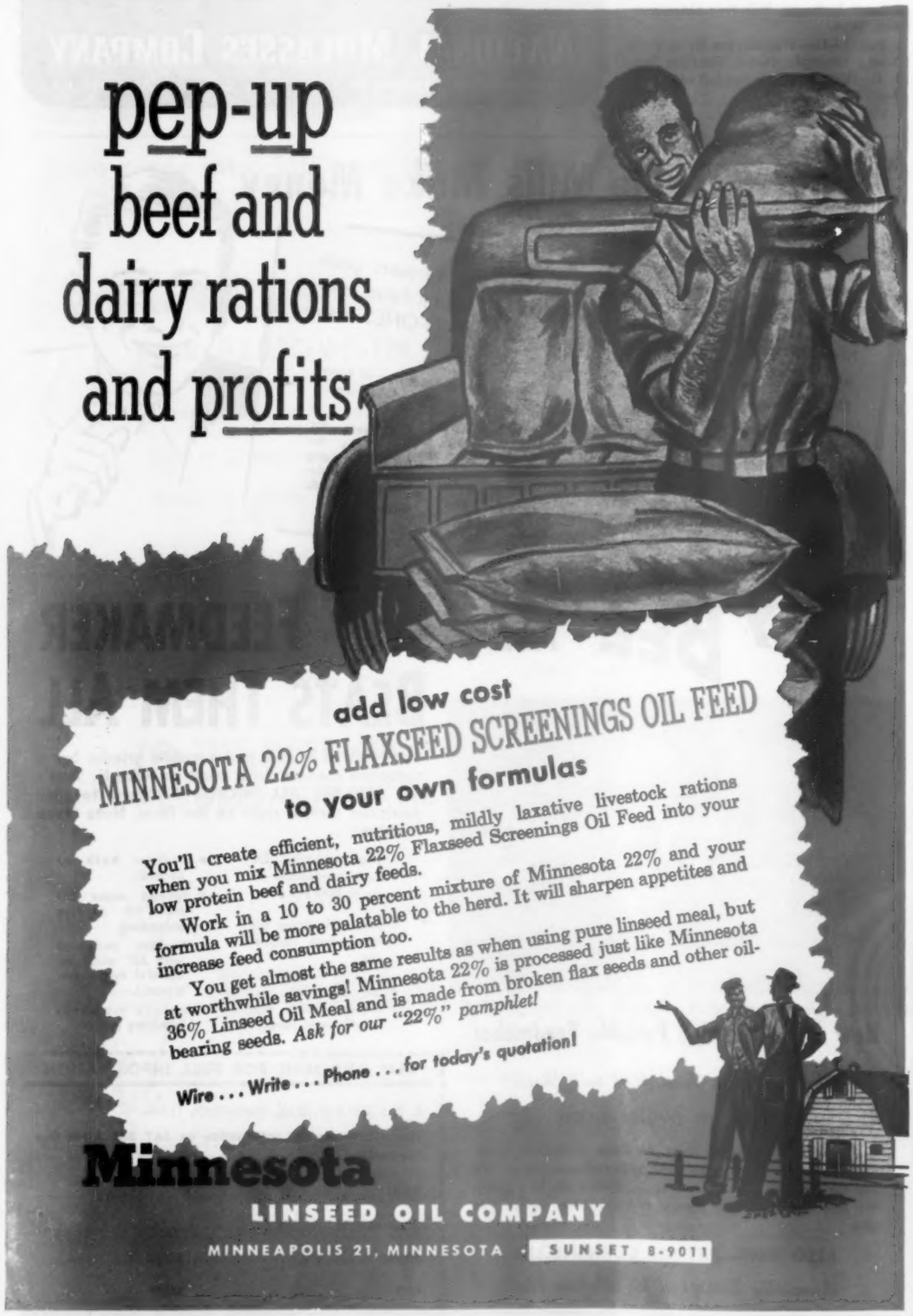
The Oregon Grange Bulletin said directors of the Grange Cooperative Wholesale, Spokane, and the Oregon Grange Supply, Portland, have approved the merger. Idaho Grange Wholesale, Caldwell, is expected to join the merger later, the Bulletin said.

The new tri-state organization would have assets of more than $2,500,000 and would distribute farm supplies to some 80 member retail cooperatives. It would have warehouses at Spokane, Seattle, Portland, Yakima, Lewiston and Caldwell.

NEPPCO Appoints Donald B. Lockhart

TRENTON, N.J. — Assuming the duties of assistant for programming, Donald B. Lockhart recently joined the staff of the Northeastern Poultry Producers Council, according to Dr. Alfred Van Wagenen, managing director.

After earning his B.S. in agriculture degree at the University of Maine in 1952, Mr. Lockhart pursued commercial work until, in 1955, he was awarded the Chas. M. Cox Fellowship to continue his studies as graduate assistant in poultry husbandry at the University of Maine where he received his M.S. degree in June, 1956.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You'll create efficient, nutritious, mildly laxative livestock rations when you mix Minnesota 22% Flaxseed Screenings Oil Feed into your low protein beef and dairy feeds.
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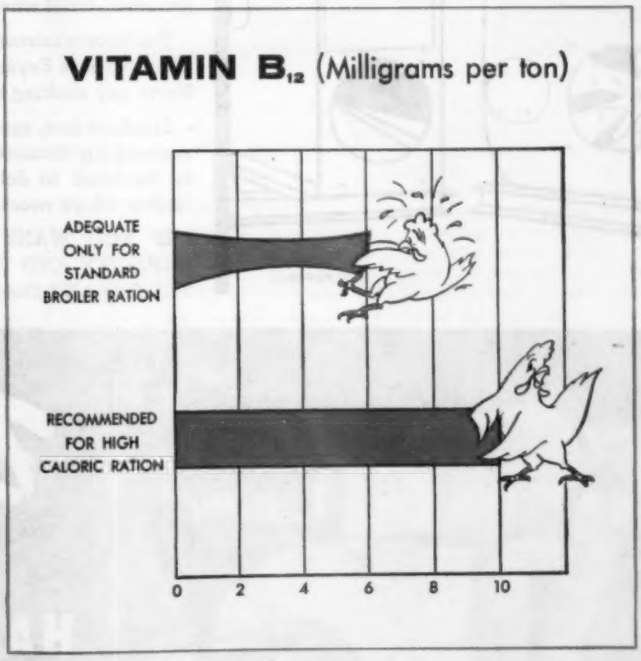

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USDA Publishes Agricultural Yearbook On Animal Diseases

WASHINGTON—The U.S. Department of Agriculture has announced publication of the 1956 Yearbook of Agriculture, "Animal Diseases."

The book contains 134 chapters by leading veterinarians and other scientists, most of them in USDA and state colleges.

Described in the book are diseases and parasites of cattle, swine, sheep, goats, poultry, dogs, cats, horses, mules, minks, foxes and other animals. Causes, symptoms, treatment, management and modes of transmission are outlined.

Introductory sections contain chapters on food supplies and animal diseases, infectious diseases common to animals and man, causes of disease, genetics and disease, protection against transmissible diseases and parasites, veterinary biological products, antibiotics, sulfa drugs and other drugs.

The Yearbooks of Agriculture have been published for more than a century. They are congressional documents and are produced in USDA with appropriations from Congress. Nearly all copies are distributed by members of Congress.

USDA has no copies for general distribution. Copies may be bought at $2 each from the Superintendent of Documents, Government Printing Office, Washington 25, D.C. Request for copies should not be sent to USDA.

In his foreword to the new yearbook, Ezra Taft Benson, secretary of agriculture, says students of veterinary and biological sciences should take more highly specialized training in their chosen fields. He emphasized the need for more biological and veterinary research, and that requires more specialization. Also, he said, facilities for biological research need further improvement.

"The needed research may cost many millions of dollars," Mr. Benson said. "The results of the research may save hundreds of millions, for morbidity and mortality from infectious, non-infectious and parasitic diseases still cause estimated losses of more than $2 billion each year."

Farm Sales Increase

SAN FRANCISCO—General farm sales, including animal and poultry feeds, increased by 6.32% between the first quarter of 1955 and the first quarter of the current year, according to estimates of the California State Board of Equalization. Stores dealing with farmers had total sales of $45,608,000 between Jan. 1 and March 31, 1956, as compared with $42,898,000 for the same three months last year. The 6.32% increase in sales for the quarter was below the average increase for retail establishments, estimated by the board at 10.41%.

National Hay Assn. Plans Convention

INDIANAPOLIS—Plans have been completed for the 61st annual convention of the National Hay Assn. to be held Aug. 26-28 at the Deshler Hilton Hotel in Columbus, Ohio.

Prof. R. S. Dougan, Ohio State University, will follow reports by the president and secretary of the association with a talk on the "Economic Outlook for Agriculture" the opening morning.

K. L. Scott, director, Agricultural Credit Services, U.S. Department of Agriculture, Washington, will speak on "Utilizing Trade Channels in Administering Disaster Relief Programs" the afternoon of Aug. 27.

The following morning will be devoted to a talk on effect of the soil bank program on the hay business by D. T. Herrman, director, Agricultural Stabilization & Conservation Committee for Ohio, and a discussion of the spotted alfalfa aphid problem by R. G. Dahms, assistant head of the Cereal & Forage Insects Section, USDA.

A number of social events are also planned for the convention.

Washington State Unit Schedules Meetings

SEATTLE, WASH.—Six district meetings and two committee meetings of the Washington State Feed Assn. have been announced by the association.

The district meetings are scheduled as follows:

Whatcom & Skagit—Sept. 25 at 99 Cafe, 4 miles north of Bellingham.

King, Pierce & Snohomish—Sept. 26 at Clark's Crab Apple Cafe, Bellevue.

Inland Empire—Nov. 7, Spokane Hotel, Spokane.

Central Washington — Nov. 8, Chinook Hotel, Yakima.

Lewis & Grays Harbor—Nov. 14, Lewis & Clark Hotel, Centralia.

Clark & Cowlitz—Nov. 15, Evergreen Hotel, Vancouver, Wash.

All meetings will start at 6:30 p.m.

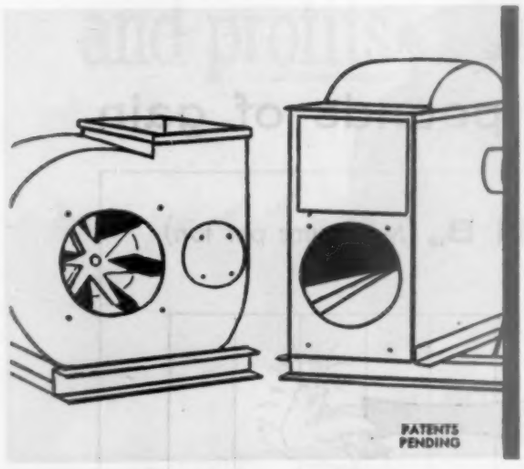
Committee meetings slated for noon at the Arctic Club in Seattle are: Sales Training Committee on Oct. 16 and the Feed Mill Production Committee on Oct. 17.

FIRM INCORPORATES

DOVER, DEL. — M&M Feed & Farm Supply, Inc., filed a charter of incorporation with the corporation department of the secretary of state's office here. Authorized capital stock of the firm is $250,000. Principal office of the firm is located in Frankford, Del.

Mr. W. T. Richards, Richards Hatchery & Feeds, Stewart, Minnesota wrote us about his Bryant Double-Duty Hammermill and said:

"I am especially pleased with the grinding capacity and efficiency."



One of the reasons Mr. Richards is so pleased with the capacity and efficiency is our Custom Engineered Fan Power. Every Bryant Double-Duty Hammermill has an 1800 rpm fan (with its own motor) running in a large full-scroll fan housing. With Bryant you get exactly the air power you need to convey and elevate ground material where you want it.

You have maximum efficiency of the fan at all times when you have Bryant Custom Engineered Air Power. Never any choking or plugging and less fire hazard.

Standard fans, carried in stock, can deliver ground material any distance up to 150 feet. Special fans can be furnished to deliver the ground material even further where necessary.

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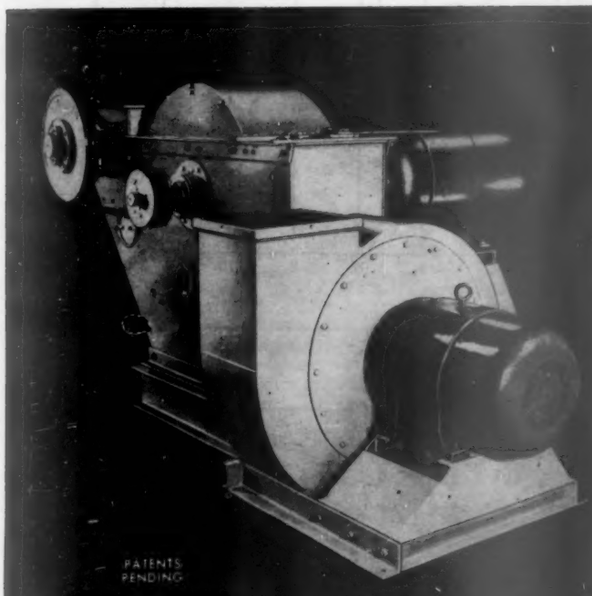

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Ezra Taft Benson

GFDNA SPEAKER—Ezra Taft Benson, secretary of agriculture, will be a featured speaker during the 60th annual convention of the Grain & Feed Dealers National Assn. at the Morrison Hotel in Chicago, Sept. 9-11. Mr. Benson will speak Sept. 11, marking his first appearance before the GFDNA.

Study on Feeding Fats to Hogs Planned

SAN FRANCISCO—The Western States Meat Packers Assn. has made a grant of $1,250 to the Washington State College in Pullman, Washington, to initiate a two-year study of feeding animal fats to hogs.

E. Floyd Forbes, president of the association, reports that the grant was made because the college has completed preliminary work on the subject of fats in feeds, "the results of which were so encouraging that the association felt that a project on this subject would be a worthwhile one for the meat packing industry" as well as for the feed industry.

To the funds granted by the WSMPA, other funds will be furnished by other sources available to the college so that the project will be amply financed to carry on in an efficient manner, Mr. Forbes explained.

The National Renderers Assn. last year initiated a project at the college on feeding animal fats to beef cattle. The final results of that project, also being conducted on a two-year basis, will be published by the college toward the end of this year.

Squibb to Market Animal Biologicals

NEW YORK—E. R. Squibb & Sons, division of Olin Mathieson Chemical Corp., and Research Laboratories, Inc., of St. Joseph, Mo., have announced that as of Sept. 15, Squibb will market, under special arrangements with Research Laboratories, a complete line of small animal biologicals for veterinary use.

These biologicals include rabies vaccine, anti-canine distemper serum, anti-infectious hepatitis serum and canine distemper vaccine. Two specialities—Sin-jex, to establish immunity against canine distemper and hepatitis at the same time with a single injection, and Femulgen, a single-injection vaccine for immunization against cat distemper—are said to be unique in the field.

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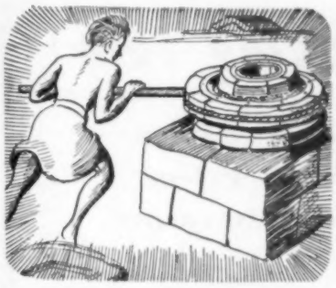
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOOD-FATTED ANIMALS

Cholera Increases

PORTLAND, ORE.—The number of hog cholera cases in Oregon is increasing, especially in the Willamette Valley, investigators for the state agricultural department report. K. J. Peterson, state veterinarian, said a number of hog cholera outbreaks in the last two months have not followed the usual pattern of a sudden onset followed by immediate death of many animals. He said most of the animals involved became mildly ill for a week or more and few deaths occurred.

JOINS CALIFORNIA GROUP

SAN FRANCISCO—Eugene L. Slater, an expert on diet for sheep and other aspects of the lamb raising industry, has become associated with the Valley Livestock Marketing Assn., Dixon, Cal. Mr. Slater has been assistant in the general lamb department of Swift & Co., Chicago, and has been connected with lamb raising and marketing since 1940.



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for grinding evolved slowly. It took hundreds of years for the transition from the saddlestone to the lever mill. The Greek Delian mill, utilizing the revolving lever principle, was made of blocks of lava bound together. The mill had no true hopper and had only a small space between the two rings. The outer ring rested directly on the inner ring.

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NORTH CHICAGO, ILL.—Poultrymen now get the best possible protection against vitamin K deficiency in their flocks by using rations containing traces of water-soluble KLOTOGEN F, according to laboratory and field reports.

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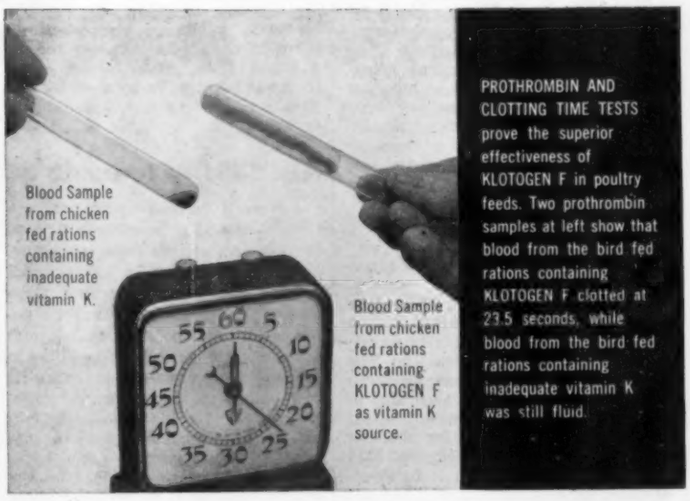
The water-solubility of KLOTOGEN F makes it more absorbable in the intestinal tracts of poultry. Repeated prothrombin and clotting time tests have shown KLOTOGEN F to be about three times as effective as fat-soluble menadione in a standard poultry feed (without sulfa medication). KLOTOGEN F is also of special value in rations containing sulfa drugs, where its insurance value is even greater.

KLOTOGEN F ASSAYED AT FACTORY

Besides its superior absorbability, KLOTOGEN F offers feed manufacturers the advantage of quantitative colorimetric assay. All KLOTOGEN F shipments are subjected to this precise test before being released for mixing in poultry feeds. Thus both feed manufacturer and grower can be sure the ration contains enough KLOTOGEN F to prevent vitamin K deficiency, regardless of field and drug stresses.

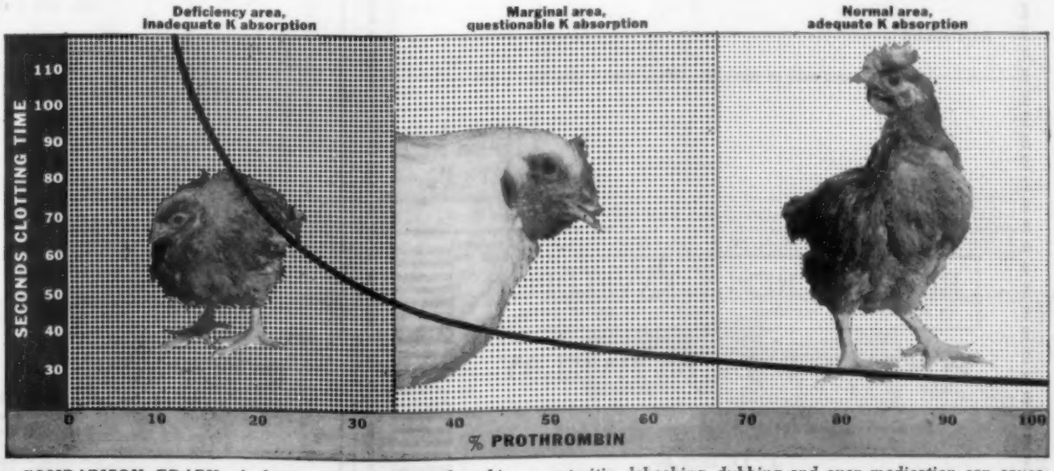

Blood Sample from chicken fed rations containing inadequate vitamin K.
Blood Sample from chicken fed rations containing KLOTOGEN F as vitamin K source.
PROTHROMBIN AND CLOTTING TIME TESTS prove the superior effectiveness of KLOTOGEN F in poultry feeds. Two prothrombin samples at left show that blood from the bird fed rations containing KLOTOGEN F clotted at 23.5 seconds, while blood from the bird fed rations containing inadequate vitamin K was still fluid.

TWO FORMS OF KLOTOGEN F

KLOTOGEN F is supplied to the feed manufacturing industry in either a pure, free-flowing powder form, or in a pre-mix. Each pound of the pre-mix contains 4 Gm. of KLOTOGEN F activity.

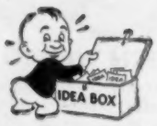
> A single gram of KLOTOGEN F, costing 10c or less, provides adequate vitamin K activity for a full ton of finished feed.

Continuing improvements in feed ingredient production methods, plus increasing use of high energy rations give this water-soluble vitamin K form new importance for feed manufacturers and growers alike. Additional information can be obtained by writing Chemical Sales Division, Abbott Laboratories, North Chicago, Illinois.



COMPARISON GRAPH of clotting times and prothrombin levels shows approximate areas of normal, marginal and deficiency prothrombin levels in poultry. Field stresses, such as enteritis, debeaking, dubbing and over-medication can cause vitamin K deficiency and resultant hemorrhagic disease in birds in the marginal prothrombin group.

Worth Looking Into



New Products
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New Literature

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

No. 5532—Feed Blender

New literature giving specifications and flow sheets on the new hydraulic drive B&L portable formula feed blender has been released by its manufacturer, Barnard & Leas Mfg. Co., Inc. Well illustrated and printed in two colors, bulletin No. PB-556 explains with diagrams the plant's operation. Flow sheets show how the operator can produce a feed formula using farm grains and roughage with supplement and/or molasses. Also shown is the re-cycling operation for adding trace medicants, antibiotics, enzymes and minerals. Another illustration shows the continuous grinding, mixing and molasses blending operation. Up to 20 tons per hour can be produced, it is claimed. Secure more complete details by checking No. 5532 on the coupon, clipping and mailing it.

No. 5534—Film

The family of drugs called nitrofurans and their use in the prevention and treatment of poultry and livestock diseases is described in a film, "The Lifesaving Nitrofurans", prepared by Hess & Clark, Inc. The 26-minute color film was produced for educational purposes, according to company officials. Information about how to secure the film for showing will be sent if you check No. 5534 on the coupon and mail it to Feedstuffs.

No. 5533—Swine Product

Aurovim for swine, described as a new antibiotic, vitamin and mineral combination for adding to feed or drinking water, has been introduced by the American Cyanamid Co. The new product, containing Aureomycin chlortetracycline, is said to promote growth in swine and is indicated for the treatment of bacterial enteritis and bacterial pneumonia in addition to the prevention of iron deficiencies. For young pigs that are weaned and are drinking or eating, the product serves as a vitamin supplement. It is available in 1-lb. packages and 3-, 10- and 25-lb. pails. Secure more complete information by checking No. 5533 on the coupon and mailing it to Feedstuffs.

No. 5531—Cleanser

Increased wetting properties and greater cleansing power are claimed for Pennsylvania Salt Manufacturing Company's product called General Manual Kleanser. Known as a farm and dairy cleanser, it has been reformulated to include nonionic and anionic wetting agents and additional polyphosphate content to make it more effective in hard water areas. The product is available in 5-, 10- and 25-lb. farm packages and 125- and 350-lb. bulk sizes. For more complete details check No. 5531 on the coupon and mail it to this publication.

No. 5528—Salt Process

The Morton Salt Co. has announced "a new process developed at Morton's research laboratory" for making its mixing and iodized mixing salts used in feeds "free-running". The treatment is claimed to prevent the mixing salts from absorbing moisture and caking. Other benefits claimed are that the process eliminates the use of dusty, easily segregated filler additives and the natural dustiness of salt in bulk handling. More details will be supplied if you will check No. 5528 on the coupon and mail it to Feedstuffs.

No. 5530—Booklet

An 8-page booklet describing in words and pictures the "inside story" of Christie's Spizzerinktum New Hampshires, Granite Whites and White New Hampshires, has been published. It is available without cost by checking No. 5530 on the coupon and mailing it to Feedstuffs.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

No. 5414—Sample package of tablets for turkey and chicken treatment, Hess & Clark, Inc.

No. 5415—Farm scale, 60-lb. capacity, for handling by feed dealers, American Family Scale Co.

No. 5416—Manlift bulletin, Allis-Chalmers Manufacturing Co.
Sprout, Waldron & Co., Inc.

No. 5490—Guide to time-zone and daylight saving time differences, U.S. Industrial Chemicals Co., division of National Distillers Products Corp.

No. 5491—Feeding experiment brochure, Lime Crest Research Laboratory.

No. 5492—Corn sheller, J. B. Sedberry, Inc.

No. 5494—Tanks for liquid phosphatic feed additive storage, Butler Manufacturing Co.

No. 5496—Hammer mill with separate motors for blower and at each end of main rotor shaft, Southern Equipment Co.

No. 5495—Roller mill for oat crimping, Duplex Mill & Manufacturing Co.

No. 5497—Mash product for blackhead treatment, Whitmoyer Laboratories, Inc.

No. 5498—Preservative and flavoring agent for ensilage, Flavor Corporation of America.

No. 5499—Chicken barbecue literature, Poultry and Egg National Board.

No. 5500—Self-unloading feed body, Snyder-Meylor Co.

No. 5501—Coccidiostat, Merck & Co., Inc.

No. 5502—Sprays for grain protection, Larvacide Products, Inc.

No. 5503—Calcium iodate, Mallinckrodt Chemical Works.

No. 5504—Sweep auger attachment, Andrews Machine Co.

No. 5505—Drinking water wormer for poultry and swine, Bingman Laboratories, Inc.

No. 5506—Conveyor for multi-level handling of palletized cases, Alvey Conveyor Manufacturing Co.

No. 5507—Calcium carbonate in livestock and poultry feeds, Calcium Carbonate Co.

No. 5508—Embezzlement controls booklet, Fidelity & Deposit Co.

No. 5509—Elevating tail gate for pickup and express truck bodies, Mid West Body & Manufacturing.

No. 5510—Corn sheller-cleaner, Myers-Sherman Co.

No. 5511—Fat-enriched feed ingredients, Standard Feed & Fertilizer, Inc.

No. 5512—Animal health products merchandising handbook, 20¢ per copy, Feedstuffs.

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- ☐ No. 5530—Booklet
- ☐ No. 5531—Cleanser
- ☐ No. 5532—Feed Blender
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FARMING CHANGES

(Continued from page 20)

that will first establish the market for broilers and then maintain and increase the market.

The tendency throughout the country is toward larger flocks, and in the Midwest there will be both cage layer plants and large floor flocks. The number of large commercial flocks will increase. However, it is believed, there will still be many farm flocks of 300 to 500 birds, or even larger, which will produce and market eggs profitably. But, if such flocks are to survive, they must get better management than most now receive. The farmers must go along each year on a regular, planned basis, just as commercial poultrymen do.

"No longer can a farmer be 'on the fence' in January or February as to whether or not he is going to 'start any chicks this year,'" it was pointed out. "He's going to have to know. In the past many a farmer just guessed on how conditions would be in the fall, and sometimes he had a bunch of good laying pullets in the fall when the price of eggs was good; more often he didn't. If he's smart, he'll start about the same number of chicks from year to year, just as the commercial man does. Some years he'll make more money than in other years, but he'll always be 'in the running.'"

There have never been too many eggs of top quality at any one time, it was noted, and the midwestern poultry industry does have a good future if it will adhere to the policy of producing high quality products.

Cage Layers

What about this business of cage layer operations? That came in for some discussion, too, at the session on the Great Plains' poultry future.

One of the interviewers, noting that cage layers are becoming more popular in the North, said it is estimated that there now are some 250 cage operators in an area including the Dakotas, Minnesota and Wisconsin.

Answering a question on cage layers, Mr. McNeal pointed out that cage laying is a step away from the sideline flock type of egg production. The operator must convince himself to go into it on a major basis.

Ideas on cage layer housing in northern areas, he commented, are still in a state of change.

He also noted that, in thinking about cage layers, it is necessary to consider the flock replacement raising part of the operation, as well as the hens.

Another factor in the cage outlook, Mr. McNeal said, is consideration of alternatives for farmers in the area under discussion. Cages in the North are definitely coming, he continued, but relatively good sources of income which already exist for many farmers may limit the speed with which cage operations are established.

On the question of costs per bird, Mr. McNeal explained that the investment per bird in a cage plant varies among different areas, depending on type of housing required in different climates. In the warmer areas, he said, the cost per bird—including house, cages and first birds in the house—ranges from under $5 up to about $5.50.

In the North, he said, some persons started out over-building. Now, he continued, there are, for example, more two-story houses, with more birds, etc., to cut costs. The investment per bird will be somewhat higher in the North than in the South, but it has been over-stated, Mr. McNeal said. Some persons estimate the cost in the North to be $1 or more per bird than in the South.

(A story on cages in northern climates appeared in the Aug. 4 issue of Feedstuffs.)

Dr. Huttar reviewed some of the reported advantages for cages, including automatic culling, cleaner eggs, elimination of social stress among birds, and sufficient feeder and waterer space (something on which many producers fall down in floor operations).

So far, he continued, relatively few poultrymen in the Northeast are going into cage laying, although some new poultry farms are installing the facilities. Many poultrymen of long standing, he said, are not going into it.

On the subject of culling, Dr. Huttar questioned whether "continuous culling is a blessing." A New Jersey study, he said, showed better profits when there was no culling. He said frequent culling has been given up in the Northeast.

The discussion also included remarks on the question of whether the swing to fewer and more efficient poultry farmers also means a greater swing toward lighter, more efficient layers. Dr. Huttar mentioned the most efficient Leghorns (4-4½ lb.) and most efficient Reds (5-5½ lb.), but he stressed that, regardless of breed or size, if a producer can get numbers of eggs per bird up and make the birds live, he'll have a profitable operation.

Financing Egg Production

In connection with the subject of cage laying, a good deal of the APHF panel discussion was focused on financing of egg production by outside money.

Asked about the implications of financing, Dr. Engene said that if it develops more extensively, it will (1) lead to greater efficiency in egg production, and (2) also may pose some

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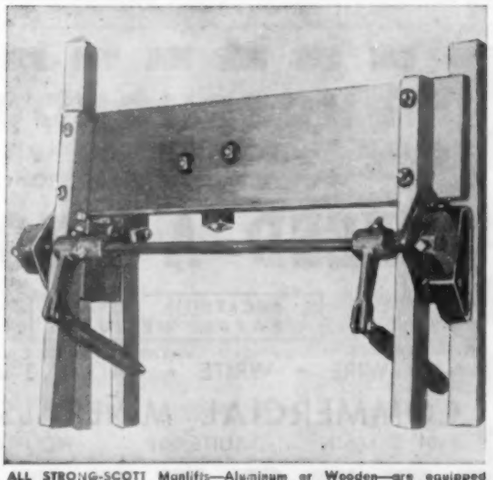

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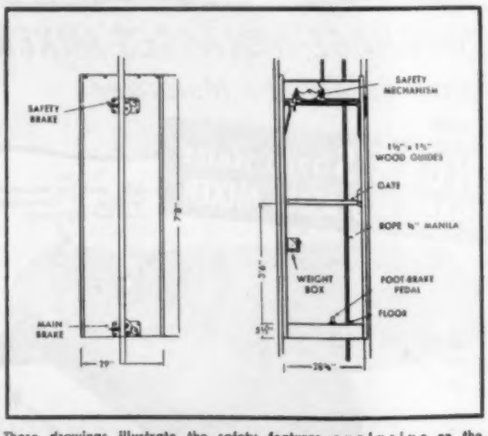
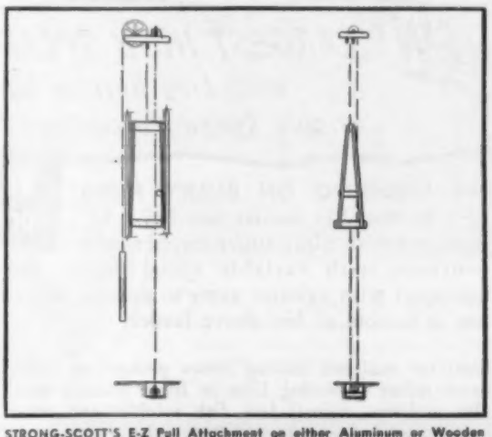
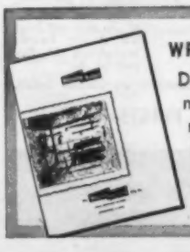


These drawings illustrate the safety features exclusive on the STRONG-SCOTT Aluminum Manlift. Notice STRONG-SCOTT'S Aluminum Manlift has solid safety panels on BOTH sides. The Aluminum lift is also equipped with anti-skid flooring and special safety bars hinged across the opening.



STRONG-SCOTT'S E-Z Pull Attachment on either Aluminum or Wooden lifts (shown in the drawing) is designed to give easier operation with less effort on the part of the operator. The E-Z Pull Attachment is also available as a separate unit or can be installed on lifts already operating, with little expense.



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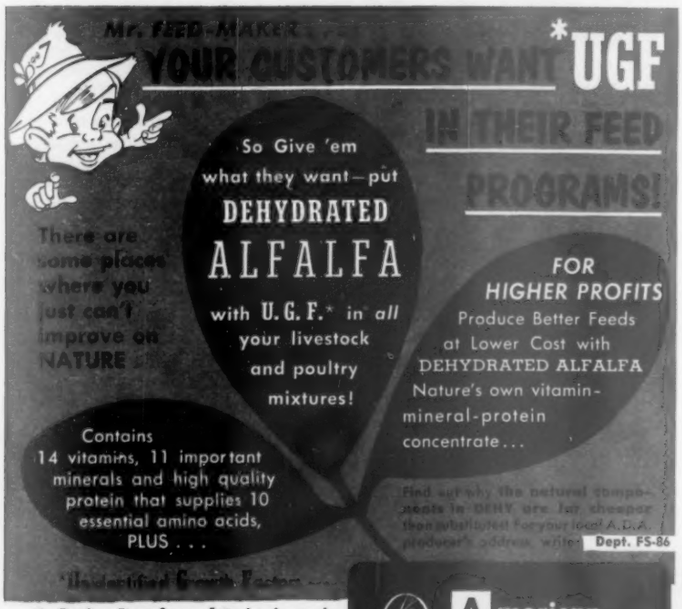
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dangers if it expands too far. Producers, he said, would more and more become, in effect, "employees."

Mr. McNeal, pointing out that it has already started, said that there will be more financing of egg production by outside money.

He said that this will speed up the trend toward larger and more efficient egg producing plants, which require a good-size investment.

If financing of cage operations and egg production is handled soundly, Mr. McNeal said, it can be a good thing. However, he added "if it goes across the board in a wild race effect and keeps inefficient producers in the industry, it will hurt the industry, putting a ceiling on good operators' returns; it will be bad like any subsidy."

Dr. Engene said that he didn't think that financing of egg production would go so far as in broilers. In broiler production, he said, more capital, feed, etc., are required per man.

Discussing some of the results of financing, he noted that it can result in having trained experts working with producers, thereby leading to more efficiency in production.

Extensive Financing Seen

Dr. Huttar said he thought financing was likely to come in egg production as it has in broilers.

In broiler production, he continued, margins have been squeezed down and operations have to be large. Meanwhile, the trend is toward larger farms all over the U.S. He cited increases in New York in average numbers of layers per farm, and he said that the present average of 190 probably will go up to 500 in five years.

With larger operations, Dr. Huttar said, it takes more capital to get in and stay in the industry. Risks are greater and many producers can't take big losses when they occur. As a result, he said, financing of egg production will come.

"It is bad in a way," he said, "but some good can come from it; it can help many farmers to boost their incomes."

Although it wasn't brought out specifically in the panel discussion, other reports told of a number of feed companies getting into financing of cage laying operations in midwestern states on an extensive or potentially extensive scale. Hog financing, it has been noted, also has been increasing.

Turning to broiler production, it was asked whether midwestern states, which have lost egg markets to southern producers, will produce their own broilers instead of importing them from the Southeast.

In general, it was agreed that there would be more broiler production in the North for nearby markets.

While this question was not pursued to any extent in the APHF discussion itself, other comments have been to the effect that broiler production in northern and midwestern states will rise substantially, with more specialized producers growing birds for nearby urban markets.

In fact, this would be part of the indicated over-all trend toward production of poultry and other products closer to consumers.

Some persons in the Midwest have indicated that a factor in the picture would be that "we won't continue to ship grain to the South and Southeast and then bring the broilers back; we'll use the grain to grow our own broilers."

Others discount the feed shipment aspect and say that isn't so important in itself. They note that corn production, for example, has increased in some of the southern states, and feed mills there already can get enough corn from nearby production. They feel that the important factor will be the trend toward increased, efficient, economical production of broilers in the North for northern markets.

Some believe that northern broiler growing won't expand too greatly because "we can be thankful that our land isn't so poor that we have to go into broiler production."

However, others feel that in addition to producers in the broiler business only, there will be a good number of farmers who will find it profitable to combine good-sized broiler operations with dairy farming, for example doing an efficient job of both. One reason is that both require labor being present 365 days of the year.

Figures on Production

Figures on broiler production in some of the northern-midwestern states in the past several years show fluctuations or no definite increase. However, some states—while they do

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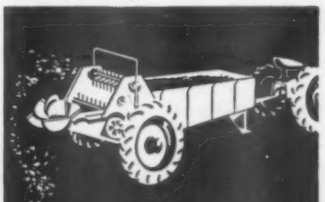

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not account for a very big share of total U.S. production or are small in relation to some of the principal producing states—do show a generally rising production trend. And further increases are anticipated in some of these states.

Wisconsin is one of the states where production has increased pretty steadily in recent years. As a college authority noted, some producers were hurt a couple of years ago and output declined again in 1955. But producers are becoming more efficient, and, as in the main broiler areas, production is up this year.

U. S. Department of Agriculture figures on broiler output show that the Wisconsin total rose steadily from about 5 million birds in 1949 to 17 million in 1954. The total dropped off somewhat to about 14 million in 1955.

Michigan is another example of a state where output has increased, going from 1.5 million birds in 1949 to 4.3 million in 1955. Other states, such as Minnesota, Iowa and Illinois, have shown fluctuations in annual production. Production in 1955 was below what it was in some earlier years, but for the most part it was just about as large or larger than, say, six years ago.

Feed Business

What does this mean to the feed business? Well, one feed man, for example, said that broiler feed business in his area this year has been up 20% from a year ago—about equal to the national increase in broiler production this year. Some other feed men serving such states as Wisconsin and Minnesota also have noted broiler feed increases.

An indication of the apparently growing interest in broiler production is found in the plans of one feed manufacturer in the region, not previously in the broiler field, to try broiler financing and feed supplying on a pilot basis in a localized section. It was planned to seek growers in a locality not too good for other types of farming and finance their production. At the same time, help in marketing the birds was to be provided through lining up an outlet through a grocery organization. If the pilot operation proved successful, the operations would be made more extensive.

Another feed man, pointing to increases in broiler production and broiler feed business in Wisconsin, predicted that—although it may be a good number of years away—Wisconsin will some day be one of the largest broiler states in the nation and that income from broilers may some day top income from cheese.

He points out that Wisconsin producers can effectively serve markets such as Milwaukee, Minneapolis-St. Paul and Chicago, as well as smaller communities. Already these producers are supplying a big share of the broilers sold in the Minneapolis-St. Paul market.

A number of "high class" operators have gone into broiler growing, he said, and some of them are doing a highly efficient job, getting better feed conversion rates than many southern producers.

Some of these producers use concentrates and their own or locally grown grains; others buy complete feeds requiring no further mixing and feel they do a better job that way.

While some producers specialize entirely in poultry, others combine dairy and poultry operations, and more of this type of combined enterprises is expected.

One feed man says that, although production of local or nearby grain is a factor in expectations of further increases in northern broiler production, it is not just a matter of feed supply; grain is being grown in the South, too. He feels that the important thing is efficient production of quality broilers for nearby markets.

In a good many cases, it appears, there is no financing of broilers as in southern regions. Some of the producers use their own resources, and some obtain bank credit, with no direct feed company financing.

Although some of these predicted changes in poultry production and animal agriculture may not develop so extensively or rapidly as some persons feel, the predicted developments hold important implications for the feed business, many persons in the industry agree.

Cattle Feeders Day At Iowa State To Be Held Oct. 17

AMES, IOWA—The annual Cattle Feeders Day at Iowa State College will be held Oct. 17, according to C. C. Culbertson, animal husbandry researcher at the college.

The date is later than has been customary for this event in the past.

The delay, Prof. Culbertson explains, is to permit completion of experiments started last winter at the college's new beef cattle nutrition farm.

Among these are tests of different levels of protein and stilbestrol in cattle fattening rations.

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POULTRY SCIENCE

(Continued from page 16)

egg, to reach 50% production nor on the feed consumption during the first month of lay.

The results of the second test conducted at Minnesota confirmed results previously obtained. It showed that even though a 12% protein level was fed from five weeks on, the initial depression of growth was overcome by 20 weeks.

Requirement for Egg Production

Investigations of the protein requirement of Leghorn pullets for egg production (maintained in laying batteries) were reported by Miller and co-workers at the University of Wisconsin. In two experiments with laying rations containing from 10 to 14% protein and 940 calories of productive energy per pound, a 13% protein level was found to be adequate for satisfactory egg production and body weight maintenance. In further testing of rations containing from 12 to 21% protein and 640 to 930 calories of productive energy per pound, the results showed the main effect of higher energy levels to be expressed through lowered feed requirements per dozen eggs produced and that there was no single calorie:Protein ratio which gave superior results.

Similar results were reported from Colorado A&M College by Thornton and associates. Single comb White Leghorn pullets maintained in wire cages and fed rations contining 11, 13, 15 and 17% protein, with and without supplemental amino acids, showed no differences in egg production according to the level of protein in the diet. Body weight gain was reduced at the lowest protein level. Egg quality was not affected by protein level.

It would appear from these experiments that the protein requirement of light breed chickens at least, is not affected by the increased energy levels (up to 940 calories/lb.) used in these experiments and that satisfactory egg production and body weight maintenance can be obtained with rations as low as 13% in protein content. Similar information on protein levels for heavy breed layers would be helpful to those formulating laying rations.

Turkey Studies

According to Carter and Wyne, investigators at the Ohio Agricultural Experiment Station, duplicate groups of 30 Large White turkeys were fed rations containing 20, 23 and 26% protein and 0, 3 and 6% added animal fat from 8 to 16 weeks. No significant differences in body weight were noted at 16 weeks, but the addition of animal fat reduced the feed conversion in all cases. Calories of productive energy per pound of feed varied from 860 to 982. Calorie:Protein ratio varied from 33 to 49.1.

In a second trial, turkeys were fed rations containing 17, 20 and 23% protein and 0, 3 and 6% added animal fat. Here again, no significant differences were noted in weight, but the addition of fat reduced feed conversion. The average weight of the birds on the 17% protein ration with added fat was the same as the weights of birds on any of the other rations.

In the past Texas A&M College has issued reports that the Calorie:Protein ratio is approximately 28 to 30:1 for turkey starter diets containing 26 to 28% protein. It was reported by Atkinson and associates that the results of a recent test indicated that for the first eight weeks the poult requires a protein level of 30 to 32% with a Calorie:Protein ratio of 27-30:1 for optimum growth. For figuring calories, the productive energy values of Fraps were used with the exception of fat which was figured to contain 2900 calories per pound.

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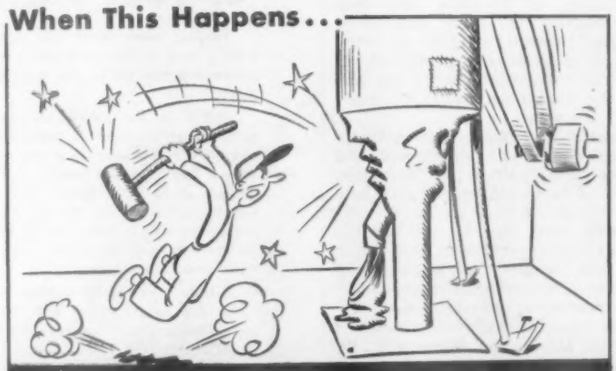

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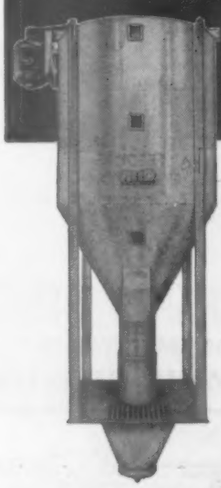

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sources of fat was made at the Arizona Agricultural Experiment Station. The fats tested were (1) a vegetable fat containing 49.2% free fatty acids, (2) animal fat containing 8.8% free fatty acids, (3) animal fat dried on an inert mineral carrier, and (4) a fish-vegetable fat containing 56% free fatty acids. These fats were used in both a corn and milo-soybean oil meal-fish meal starter containing 20.6% crude protein and 870 calories of productive energy. The substitution of 3% fat for 3% corn or milo raised the productive energy to 926 calories per pound of ration.

The animal fat and the fish-vegetable fat improved growth slightly. The greatest improvement was obtained from the vegetable fat. The dry animal fat had a detrimental effect on growth, indicating that the carrier was not efficiently utilized by the chick.

From this test, it appears that animal fats, vegetable fats and vegetable-fish fats can all be used in poultry feeds. As long as the fats are stabilized, the level of free-fatty acids in the fats means little as an indication of the quality or value of the fat. Also, in this test there were no differences in the value of the corn and milo rations.

MINERALS—Scott and co-workers of the University of Illinois reported data to substantiate their thinking that 100 ppm (0.01%) of supplemental magnesium in their purified diet supported maximum growth. Levels of magnesium up to 600 ppm (0.06%) did not depress growth; however, the 600 ppm level appeared to have a crippling effect on the birds. An arginine deficiency also seemed to have a crippling effect.

This does not mean that 100 ppm of magnesium is an adequate level in practical feeds, but it would tend to indicate that no more than this amount will be needed in most chick starter feeds.

Due to the current knowledge that high levels of calcium and/or phosphorous contribute to parakeratosis in swine and that supplemental zinc will help to alleviate this condition, Canadian investigators, Slinger and co-workers, investigated supplemental zinc to learn if it would prevent a foot dermititis in turkeys. They found that the addition of 50 ppm of zinc to a practical diet containing 58 ppm of natural occurring zinc, resulted in a significant increase in the four-week weight of the males and tended to depress female gains. The practical diet contained either 2 or 3% calcium. There was no significant interaction between the zinc and calcium levels. It is important, though, that the turkey apparently needs a much higher level of calcium than the pig.

It was reported by Reid and associates of Texas A&M College that the addition of 0.0126 ppm of molybdenum to a purified chick ration increased the growth of depleted chicks 10 to 18%. The molybdenum in the diet was 1.0-1.1 ppm. Similar growth response has been obtained from supplemental molybdenum in the poult ration.

Although the evidence is not conclusive, it appears that the chick and poult may have a requirement for this element.

In a test at Purdue University it was found that 325 ppm of copper in a corn-soy ration fed to day-old chicks caused muscular dystrophy and retarded growth at four weeks of age. The investigators, Mayo et al, reported that in another test 520 ppm copper decreased the growth rate of male chicks at four weeks of age, but the birds recovered from the growth depression by the time they were eight weeks of age.

VITAMINS—During the past year several groups of investigators have devoted considerable time to research on vitamin E in poultry nutrition. At Washington State College, Jensen and McGinnis conducted experiments designed to determine maximum amounts of supplemental vitamin E needed in a corn-soy-alfalfa type basal ration in order to obtain maximum hatchability of turkey eggs. The basal ration contained 1% of added fish liver oil as a stress factor to accentuate vitamin E deficiency. Their results showed that fertility apparently was not affected by vitamin E. Maximum hatchability was obtained when alpha tocopherol acetate was added to the basal ration at levels to supply 12 to 24 I.U. of vitamin E per pound of ration. The addition of 0.025% BHT to the basal ration did not improve hatchability during the 18-week experimental period. The results of this test have only limited practical application because of the fact that an additional stress was placed upon the ration by the addition of fish liver oil. It would be more desirable from the standpoint of the practical poultryman to determine how much vitamin E from natural carriers or from concentrates is needed to adequately fortify practical turkey breeder rations.

Chick Studies

In chick studies with vitamin E deficient rations, M. L. Scott and associates of Cornell University found the edematous condition associated with exudative diathesis to result from the escape of fluid containing blood plasma protein from the capillaries into the tissues following an increase in capillary permeability. Administration of a single oral does of 200 mg. of alpha tocopherol acetate caused complete disappearance of exudate and return to normal of plasma protein within 48 to 72 hours.

Evidence presented from further studies with vitamin E deficient chicks indicated that the two expressions of vitamin E deficiency in chicks —exudative diathesis and encephalomalacia—appear to be separate and distinct disorders. However, such a conclusion seems less valid in view of other reports that high mineral levels in some experimental chick diets contribute to a high incidence of exudative diathesis and, also, that at least one other investigator (Briggs, U.S. Department of Health) reported instances where he was unable to reproduce either exudative diathesis or encephalomalacia on diets devoid of vitamin E. These researchers as well as others feel that other factors such as vitamin E carryover from dam to chick, antioxidant effects and the

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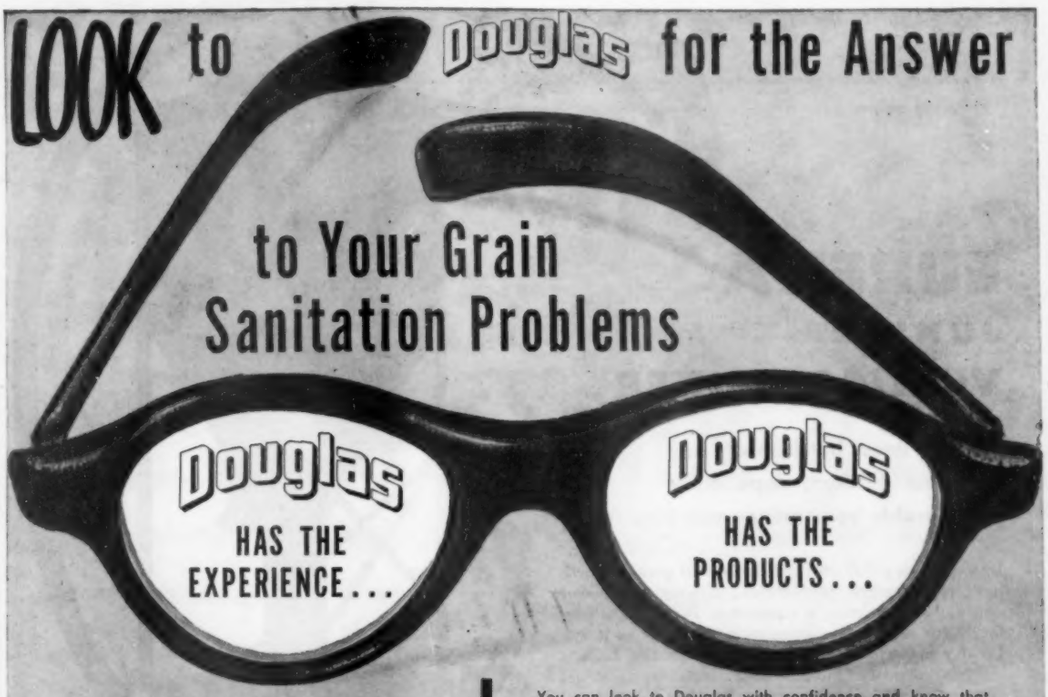

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presence in the diet of fats susceptible to oxidation are responsible for at least some of the variations in the results reported. It would also appear that, in certain areas, at least, vitamin E deficiency in chicks is more of a problem for the researchers than it is for practical poultry producers. A good deal more research is needed to find more facts concerning vitamin E deficiency in growing chicks.

Researchers at Texas A&M College reported finding severe nerve damage in embryos from eggs produced by vitamin B_{12}-deficient hens. The data serve to emphasize the importance of vitamin B_{12} and indicate its wide nutritional effects in contributing to general health, growth and reproduction in poultry.

Factors in Blood Clotting

Vitamin K and other factors affecting the blood clotting mechanism in chicks also received attention from poultry scientists in their research during the past year. Canadian workers, Davies and March, experimented with vitamin K-deficient diets composed of unextracted natural ingredients which caused prolonged blood clotting times and hemorrhage in chicks. They found that prothrombin time (a measure of blood clotting time) was shortened and hemorrhage was prevented by the addition of beef tallow, hydrogenated animal fat, cottonseed oil and hydrogenated cottonseed oil to the vitamin K-deficient basal ration. The effect of the fats in reducing blood clotting time was not due to the presence of vitamin K in the fats; alkali treatment of the fats (which destroys vitamin K) did not remove or alter their ability to reduce clotting time. The investigators also concluded from their experiments that the action of the fats was not due to improved absorption of vitamin K since the addition to the basal ration of bile acids prolonged blood clotting time as did the feeding of surface active agents.

Shelton and co-workers from West Virginia University studied the vitamin K requirement of the chick using a corn ether extracted soybean oil meal ration supplemented with dried whey, vitamins and minerals. Vitamin K sources tested were menadione and menadione sodium bisulphite. Their present results indicate that the menadione requirement is approximately 0.54 mg. per pound of ration in the presence of 5.7% fat and up to 0.63 mg. in a ration containing 2.7% fat, whereas 0.09 mg./lb. of menadione sodium bisulphite was adequate regardless of the fat content of the ration. When considered on a menadione equivalent basis, menadione sodium bisulphite was approximately 18 times as effective as menadione.

This research provides additional information regarding the beneficial effect of fats upon blood clotting time as well as vitamin K requirements. It is wise to give consideration to vitamin K levels in poultry feeds, particularly for young chicks. It is also advisable to add additional vitamin K to the feed when sulfa drugs are extensively used. Dehydrated alfalfa, it is noted, probably will provide adequate vitamin K when used at levels in the neighborhood of 3%, except perhaps under stress conditions during disease outbreaks or whenever feed consumption is severely reduced.

Light-Skinned Animals Subject to Sunburn

URBANA, ILL.—It isn't only light-colored humans that have trouble with sunburn. The University of Illinois says a hot sun and certain forages and chemicals may combine to produce severe sunburn or sun scald in farm animals with light-colored skins.

Strong sunlight alone isn't likely to produce the condition, says Dr. Dean I. Newton of Illinois College of Veterinary Medicine. Usually the ailment also involves some agent connected with chlorophyll in such green crops as buckwheat, rye, some weeds and even lush growths of winter wheat.

Victims of this extra sensitivity to strong light may be cattle, hogs, horses or sheep. Affected areas of the skin become inflamed and sensitive, like the effect of sunburn in humans. Unless an affected animal is kept out of the sun, the skin may curl up and slough off.

Light-skinned cattle with this form of sunburn are reluctant to move about, their teats may become bluish-red and very sensitive, and milk production drops off. White-faced sheep with sun scald have swollen faces and ears. They will scratch and rub the swollen areas. In hogs, the white skin on spotted swine and on the white belt of Hampshires dries and cracks, resembling the skin condition produced by chronic erysipelas.

Little can be done for affected animals except to provide good nursing care and keep them out of sunlight.

Ceases Operation

CHARLESTON, W.VA.—After being in operation for 114 years, the Charleston (W.Va.) Milling Co. will enter another type of business, according to John T. Davis, president. The firm has been manufacturing cornmeal and feeds. Fve years ago it ceased flour milling production.

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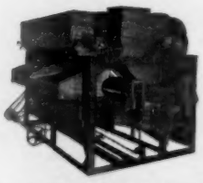
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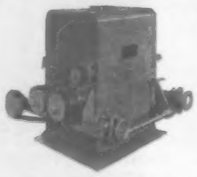
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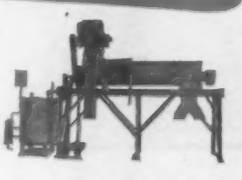
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Dried Potato Pulp Used in Steer Feeding Test

ORONO, MAINE — A report from the Maine Agricultural Experiment Station indicates that dried potato pulp can be profitably used in beef fattening rations.

The authors, Dr. H. C. Dickey and Dr. H. H. Brugman, note that many inquiries have been received as to whether or not quality beef can be produced in Maine and whether it is financially profitable to fatten steers on corn purchased from other areas or on feed produced in Maine.

The Maine station, in cooperation with Henry Swanton of West Buxton, Maine, and the New England By-Products Co. conducted a steer feeding trial using cracked corn and dried potato pulp. Twenty-four steers were divided into four groups of six steers each. The trial ran from Jan. 21 to June 11, 1956. Average starting weights were 652, 632, 468 and 481 lb., respectively in Pens 1, 2, 3 and 4. Rations used in the four pens were corn, hay and 1 lb. linseed meal per animal daily; corn, hay, silage and 1 lb. linseed meal; hay, potato pulp and 1 lb. linseed meal; corn, hay, potato pulp and 1 lb linseed meal, respectively.

Results

Average daily gains and costs per pound of gain were: 2.24 lb. and 30.5¢, 2.43 and 29.6¢, 2.41 and 18.7¢, and 2.69 and 20¢, respectively. Pen 4, receiving the dried potato pulp and corn, made the best gains, but the feed cost was 20¢ lb. Pen 1, fed corn and hay, and Pen 2, the corn, hay and silage group, made about the same gains but both had higher feed costs. Pen 3, the potato pulp group, made about the same gain as Pen 2, but the feed cost was only 18.7¢ per pound of gain, the rsearchers pointed out. The dried potato pulp cost $51.40 ton, the retail price in Bangor.

Two animals from each pen were slaughtered and graded. Most graded good, with one in Pen 3 good-choice and one in Pen 1 standard.

"Dried potato pulp as a new feed source is being produced by starch factories in Aroostook County," the report said. "It is high in carbohydrates and a good source of minerals and protein. It possesses a lot of energy for ruminant feeding. When fed at a level of 15 lb. daily with about 4 lb. of hay and 1 lb. of linseed oil meal, it forms a balanced ration for fattening beef cattle.

"Another good combination is a daily ration of 8 lb. of dried potato pulp, 8 lb. of ground corn, 1 lb. of linseed meal and 4 lb. of early-cut, suncured hay. Trace mineralized salt can be fed free choice."

The following table compares the analyses of dried potato pulp and U.S. No. 2 corn:

	Dried potato pulp %	U.S. No. 2 corn %
Water	12.31	15.0
Protein	7.69	9.6
Fiber	6.14	2.0
Sugars	70.27	69.3
Fat	.39	3.9
Minerals	3.20	1.2
	100.00	100.0

The net energy and total digestible nutrient content of dried potato pulp are said to be very nearly the same as for U.S. No. 2 corn.

Because dried potato pulp is low in carotene, the report continued, the body fat of the carcass is whiter in color than when corn or other feeds higher in carotene are fed. The whiter fat in the carcass is said to be more acceptable to the beef trade.

The authors conclude: "Dried potato pulp or dried potato pulp and corn in equal quantities make excellent beef-fattening rations that cost about two thirds as much as corn on a per pound of gain basis. Both rations yield carcasses that grade U.S. good. The dried potato pulp balanced with linseed meal and hay was the least expensive ration per pound of gain, and this ration produced beef with the highest dressing percentage."

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Terramycin at High Level Controls CRD, Pfizer Scientist Says

NEW YORK—Poultry feeds supplemented with a high level of the antibiotic Terramycin have been shown to be successful in controlling chronic respiratory disease, according to a research report by Dr. K. E. Price of Chas. Pfizer & Co., Inc.

Dr. Price, an agricultural research bacteriologist, said in reporting on results of tests: "Terramycin at both 100 and 500 grams per ton of ration markedly influenced the course of the disease, particularly at the higher level, and decreased bacterial counts of types which would otherwise result in serious secondary infection." He said that penicillin, when used at the same level, did not have the beneficial results attributable to Terramycin.

Dr. Price reported the research in a paper presented at the recent Poultry Science Assn. meeting in Raleigh, N.C.

Both field and laboratory studies, Dr. Price reported, have indicated that some antibiotics fed at levels of 100 grams per ton of feed, or higher, are beneficial in outbreaks of chronic respiratory disease. He said the benefits are manifested by decreased mortality, continued feed consumption and gain in weight.

Dr. Price and associates at Pfizer's agricultural research center studied three different regions of the respiratory tract to determine the type of bacteria present in the infected areas and to examine further best methods of treatment. He said their results showed that high-level feeding of Terramycin was the most effective in combatting the increased incidence of gram negative organisms in the infected birds.

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Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
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CHAMPION MOBILE GRINDER AND MIXer units. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

NEW AND USED FEED MILL EQUIPment, portable and stationary. Jess C. Snyder, U.S. 31W, New Albany, Indiana.

LARGE CORN SHELLERS — PORTABLE and stationary. Diesel engines. Hammer and attrition mills. C. L. Smith, Leola, Pa.

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RICHMOND GYRO-WHIPS, B-8 AND C-6 (double section) belt drive, good operating condition, $450 each. Mill Equipment Sales, Box 222, Hillsdale, Mich.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

FOR SALE—TWO 24-INCH DIXIE HAMmermills with 440-volt, 100 H.P. motors and 25 H.P. motors on fans, $2,000 each; location Colorado. Milton Morrison, Salina, Kansas.

FOR SALE—TWO 2-TON VERTICAL MIXers; one 2-ton standard Marion mixer; all rebuilt, good condition, reasonably priced. Drake Mill Machinery, Inc., Yellow Springs, Ohio.

NO. 7 SIDNEY ROLLING SCREEN CORN cleaner. No. 3 Sidney boot type corn sheller. No. 8 S. Howes 4 screen receiving separator. No. 4 Universal hammer mill. Address Ad No. 1922, Feedstuffs, P.O. Box 67, Minneapolis 1, Minnesota.

FOR SALE—ENCLOSED MOTORS, RICHardson Scales, truck scales, hammermills, oat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE: SPROUT WALDRON 336 CU. ft. (12,000 lb.) horizontal Ribbon Dry Mixers; S-W type 3036 swing head blender with 50 H.P. motor; 4'x30', 6'x30', and 6'x 50' rotary steam tube dryers; 3'x24', 4'6"x40', 5'6"x30' rotary hot air dryers. Hammermills, pulverizers, attrition mills, etc. Perry, 1403 North 6th Street, Philadelphia 22, Pa.

MACHINERY WANTED

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

HELP WANTED

WANTED EXPERIENCED NUTRITIONIST —Give qualifications and complete information. Address Ad No. 1935, Feedstuffs, P. O. Box 67, Minneapolis 1, Minn.

MACHINERY SALESMAN — EXPERIenced in grain and feed machinery essential. Territory, northern Indiana. Address Ad No. 1949, Feedstuffs, P. O. Box 67, Minneapolis 1, Minn.

WANTED—MILLWRIGHT FOR GENERAL maintenance of feed plant. We need a practical man who can install machinery and grain handling equipment. Address Ad No. 1955, Feedstuffs, P. O. Box 67, Minneapolis 1, Minn.

MANUFACTURER'S REPRESENTAtive or Broker-Salesman. Calling on feed trade to sell nationally advertised mineral feeds. Several exclusive territories open. Address Ad No. 1800, Feedstuffs, P. O. Box 67, Minneapolis 1, Minn.

MANUFACTURER'S REPRESENTAtive wanted—Salesman calling on feed trade to carry nationally advertised sideline. Good established repeat item. Several exclusive territories open. For additional information, write us and describe territory you now cover. Reply Herb Tessereau, P.O. Box 5078, Minneapolis, Minn.

OLD ESTABLISHED EASTERN JOBBER interested in hiring sales representative for Virginia territory. Selling specialty ingredients to manufacturers only. Prefer man with feed nutrition and animal health background. Must be willing to spend considerable time traveling. Pay all expenses, good salary and commission plan and excellent profit sharing retirement plan. Your inquiry handled in strict confidence. Address Ad No. 1959, Feedstuffs, P. O. Box 67, Minneapolis 1, Minn.

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BABY CHICKS—AS HATCHED OR SEXED —Five popular breeds and one hybrid. Quality - Quantity - Service. Wholesale prices. Milford Hatchery, Liberty Road, Randallstown, Md.

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WANTED—MEN TO OPERATE PORTAble mill. Midland Mill, 10 Homedale Road, Hopkins, Minn.

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GENERAL SALES MANAGER, WITH over 20 years' successful experience in all phases of sales training and sales management, credit, finance, traffic, advertising and sales promotion, seeks new connection with midwestern feed manufacturer. Available in 30 days. Address Ad No. 1937, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

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Such a man walked into our office the other day. He is 37 years old, a TOP college graduate with a solid background in agriculture, sales promotion, advertising, sales management and administration. His experience—and references—reveal that he has unusual drive, sound judgment, sales and organizational ability combined with real talents as a writer and public speaker.

Naturally, we are proud to represent him in his search for his next position. If you are producing for the rural markets and need top caliber sales management, sales promotion, advertising—or possibly a complete overhaul of your entire merchandising program—he may well be your man.

Resume mailed—interview arranged—no obligation, whatever.

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FESCUE SEED SOLD FOR FEED

CHICAGO—The Commodity Credit Corp. office announced the sale last week of its entire inventory of slightly more than 1,500 tons of tall fescue seed on an "as is, where is" basis for feed purposes. A bid of $12.15 ton took the entire quantity of 3,010,350 lb.

Under the terms of sale, the seed may be used only for feed purposes, with responsibility for pickup and transportation resting with the buyer. The seed is located in various sized lots, mostly in Kentucky, with one lot in southern Illinois.

Exact Weight Merges With Starch Firm

COLUMBUS, OHIO — Shareholders of the Exact Weight Scale Co. and Keever Starch Co., Columbus, have voted to merge their operations into a new company to be known as the National Industrial Products Co.

The new company, with headquarters in Columbus, will coordinate the activities of four divisions: The Exact Weight Scale Co., the E. W. Scale Co., Ltd., Toronto, Ont.; the Keever Starch Co., and the Standard Chemical Works of Columbus.

Exact Weight, the outgrowth of the Smith Scale Co. founded in Columbus in 1916, manufactures specialized weighing equipment. Keever Starch, founded in 1898, produces commercial starches for laundry and institutions and sizing for the textile industry. It also produces gluten for the food industry and adhesives for corrugated boxes.

Tahlman Krumm, Exact Weight's president, and Charles J. Kurtz, Keever president, said that both companies feel that the combining of their facilities will add to the sales potentials of each.

Swine Day Aug. 27

EAST LANSING, MICH. — Swine feeding experiments at Michigan State University will be shown as part of the program planned for Swine Day at the university Aug. 27. Visitors will be able to look at studies of methods of feeding when they tour university swine research facilities. The experiments include a comparison of ground mixed rations and free choice feeding, ground grain vs. whole grain, rations with and without oats, effects of over-feeding of minerals, and levels of antibiotics which are fed. Other tours and talks on the hog outlook and efficient pork production are also planned.

Spotted Alfalfa Aphid Appears in Kentucky

LEXINGTON, KY. — The spotted alfalfa aphid which has damaged alfalfa production in the Southwest in the past few years finally has appeared in Kentucky.

Specimens collected in Kentucky and sent to Washington for identification have been positively identified as the spotted alfalfa aphid.

Dr. Kenneth Starks said the specimens were collected recently in Hickman County, on the Mississippi River. The infestation was light, he said.

Walter Holstein Dies

MILWAUKEE — Walter C. Holstein, 72, president of the Mohr, Holstein Commission Co., prominent in the grain business in Milwaukee for over 50 years, died Aug. 13 at Milwaukee Hospital after a short illness.

He is survived by his wife, Jane; a daughter, Mrs. Suzanne Haven; two brothers, Albert, Milwaukee, and Paul, in California, and two grandchildren.

Fewer Feeder Lambs Sold in California

SOUTH SAN FRANCISCO — The 1956 auction season at the South San Francisco Union Stockyards was closed Aug. 2 with a decrease in the number of feeder lambs offered for sale.

There were a total of 12 auctions for the season just ended, the same number as last year, but only 26,700 head of spring feeder lambs were sold, compared with 32,400 head for the 1955 season.

Prices on the spring feeder animals generally showed little difference between the two periods, although the prices on the lambs offered during late May and early June were higher than last year or for any other period during the 1956 season.

The California Wool Growers Association offers in explanation for the drop this year the fact that the North Coast section of California experienced an unusually hard winter, one of the results of which was a substantially smaller lamb crop than in previous years.

Millfeed Production Drops Slightly

Production of millfeed in tons for week ending Aug. 10, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest* Weekly production	Southwest* Crop year to date	Northwest* Weekly production	Northwest* Crop year to date	Buffalo† Weekly production	Buffalo† Crop year to date	Combined** Weekly production	Combined** Crop yr. to date
Aug. 6-10	24,997	144,460	13,702	76,382	11,426	60,378	50,125	281,210
Prev. week	25,429		‡14,162		10,910		‡50,501	
Two wks. ago	24,633		14,012		9,925		48,570	
1955	23,793	149,697	11,824	65,648	10,835	63,745	46,462	282,090
1954	24,521	147,556	13,595	72,351	10,220	58,009	48,336	277,916
1953	23,218	137,226	12,816	67,384	9,386	52,326	45,420	256,936
1952	25,025	146,183	14,219	83,083	9,103	67,537	48,347	286,803

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

WEDDING ANNIVERSARY — In celebration of their 50th wedding anniversary Mr. and Mrs. James H. Compton, pictured above, are holding open house at their home in Wichita, Kansas on Aug. 19. Mr. Compton has been sales representative of the Fulton Bag and Cotton Mills in the Southwest for many years.

GMI'S NEW OFFICE—The architect's model of the new office building planned by General Mills, Inc., near Minneapolis, is pictured above. The new structure will be built as a two-section arrangement with an enclosed connecting link between. Larger of the two sections will be the main office building. Company executive offices will be housed in the smaller section. The exterior will be mostly glass and extruded aluminum framing. Preliminary work is now underway with completion date set for early 1958.

Dr. Arthur Weber Head Of Great Plains Council

FORT COLLINS, COLO.—Dr. Arthur D. Weber, dean of agriculture, Kansas State College, was elected general chairman of the Great Plains Agricultural Council at the end of the council's meeting at Fort Collins, Colo.

The council is made up of agricultural leaders in the 10 Great Plains states of North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, Montana, Wyoming, Colorado and New Mexico.

Dr. Weber also is chairman of a north-central regional committee composed of deans and directors of agriculture in 13 north-central states.

The Great Plains Council recommended that a controlled-climate laboratory be created to study plant growth and development under varying climatic conditions and that the national laboratory be located in the 10-state area.

Western Grain Builds Bulk Feed Plant

BIRMINGHAM — Construction of a new $500,000 bulk feed plant for the Western Grain Co. was started here recently. Completion of the plant is expected in about six months. One of the largest feed and corn millers in the Southeast, the Western company is headed by B. McCall. The firm produces Jim Dandy brand of formula feed, dog foods and corn products.

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Standard steel elevators, belt and bucket type, available from stock. Ten Heavy Duty sizes, from 300 to 10,000 Bu./Hr., for continuous service and four Light Duty sizes, from 110 to 750 Bu./Hr., for intermittent service. We also manufacture screw conveyors and hoppers. Send your requirements for complete information.
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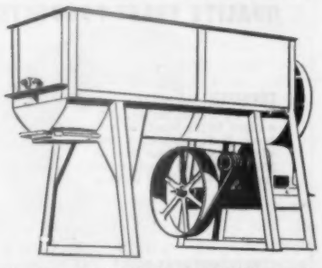

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DOUBLE DUTY
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Protein in Laying Rations Cut in Wisconsin Test

MADISON, WIS. — The possibility of reducing amounts of protein in rations for laying hens was reported recently by University of Wisconsin researchers.

They said studies indicate laying mashes with 12% protein are suitable for hens under some conditions. Fifteen per cent protein has been recommended previously.

In Wisconsin experiments, hens in laying batteries on 12% mashes did as well as those on mashes with more protein.

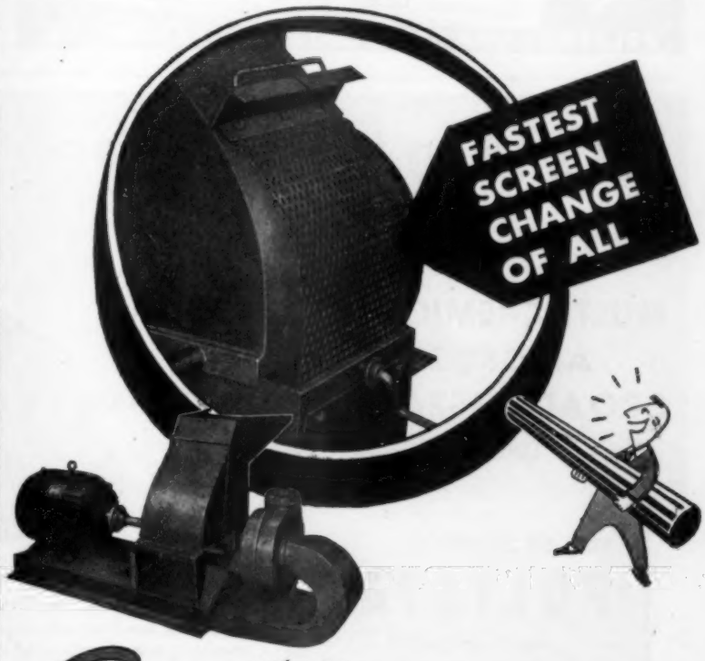
The research was reported at the Poultry Science Assn. meeting at Raleigh, N.C., by E. C. Miller, M. L. Sunde and C. A. Elvehjem.

The tests involved Leghorn pullets kept in laying batteries at room temperature. The research didn't show the protein and energy needs of heavy breeds or hens kept on the floor and exposed to cold temperatures.

Under conditions of the test, the energy level of the ration didn't make much difference in per cent egg production but affected the pounds of feed needed per dozen eggs.

PRICES LOWER

PORTLAND — Prices received for animals at the recent Willamette Valley ram sale at Albany generally reflected the downward trend in evidence at other Northwest sales this year. The 188 rams and ewes averaged $86.70, as compared to last year's $104.11 average for 172 head. Some 162 rams sold for a $93 average, $23 lower than in 1955. The 26 ewes sold for a $47.80 average, practically the same as last year.



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Not only do compact Schutte Mills feature the fastest screen change, but they're unequalled for ruggedness and stamina. Equipped with Schutte Pat. Adjustable Hammers, they're built to handle heavy work loads.

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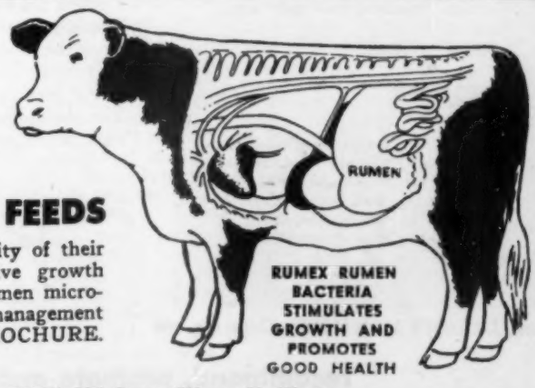
DAIRY & BEEF CATTLE FEEDS

No Cattle can gain faster than the activity of their rumen bacteria. RUMEX provides active growth stimulating, live colonies of the entire rumen microflora. RUMEX is the answer to many management problems. Send for the new RUMEX BROCHURE. It reveals many facts you should know.



RUMEX RUMEN BACTERIA STIMULATES GROWTH AND PROMOTES GOOD HEALTH

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Basic Material Manufacturers and Headquarters for Technical Information.

Stilbestrol Pellets Used on Large-Type Turkey Broilers

MADISON, WIS. — A recent University of Wisconsin report indicates that large type turkeys make good broilers if treated with diethylstilbestrol pellets.

This, the scientists say, can help turkey raisers because the large types grow faster and make better use of their feed. Large type turkeys marketed at broiler size without hormone treatment, they noted usually don't have enough fat covering to make a plump appearing, juicy bird, and because of poorly finished birds on the market, turkey broilers have in some cases been getting a bad name.

Dr. John L. Adams of Wisconsin said he has found that one pellet of stilbestrol makes large type turkey broilers even fatter than small type turkeys which are not treated. Cash benefits from treatment, he said, ranged from 6 to 9¢ per bird.

Also, the large type birds reached broiler weight about 20 days earlier than small type birds, and treated large types gained about ½ lb. more during the 86-day feeding period.

Dr. Adams said he is recommending hormone pellets for large type turkey broilers.

He reported the test findings at the recent Poultry Science Assn. meeting in Raleigh, N.C.

Exhibits Planned for Minnesota Conference

ST. PAUL—The Minnesota Animal Nutrition Short Course, to be held Sept. 10-11 at the University of Minnesota, will include a number of exhibits.

Exhibits, according to present plans, will include a harness for running metabolism tests with hogs, meat-type carcass vs. fat carcass, and bones from pigs on calcium tests.

Also, there will be a tour to see swine feeding tests in progress.

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MULTI-CHEMICAL FEED ADDITIVE AFFORDS BROAD DISEASE PROTECTION FOR CHICKENS AND TURKEYS

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POLYSTAT

MULTI-CHEMICAL, BROAD-RANGE DISEASE PROTECTANT FOR CHICKENS AND TURKEYS

"Broad spectrum" is a descriptive term applied to certain drugs and feed additives. It means that they are effective against widely different damaging disease organisms.

Polystat, with its combination of chemicals (each effective against specific diseases), is truly a broad-range additive. It is a protectant against the following diseases and conditions:

COCCIDIOSIS — all types in chickens and turkeys.

TYPHOID — in chickens and turkeys.

PULLORUM — affords a good measure of protection in chicks and poults.

WORMS — large roundworms and tapeworms.

HEXAMITIASIS — in turkeys.

BLUECOMB — in turkeys.

In addition, Polystat *stimulates growth and improves feed conversion.* Its effect on subclinical (unseen) disease and stress factors is indicated by the improvement in flock health, growth, and production.

Everyone connected with the poultry industry knows disease problems can be complex. We who work directly with diseases are constantly discovering new facts and concepts, such as the effects of stress on the physiology and, therefore, the disease resistance of the bird.

You in the feed industry are certainly aware of the increasing need for preventive, therapeutic, and supportive mixtures.

Clearly, with the bewildering complexity of diseases and stress factors, the poultryman now needs protection along a broad front. This is why I urge you to take a new look at Polystat.

Polystat, a multi-chemical product, affords the broad disease protection that poultrymen need. It helps prevent coccidiosis, worms and hexamitiasis, and also stimulates growth. Recently, we have discovered that Polystat also offers protection against pullorum, typhoid, and turkey bluecomb.

All these specific disease-preventing properties add up to effectiveness against a broad range of organisms from Salmonella bacteria to protozoans and worms.

The effect of Polystat on growth and on feed efficiency indicates that it reduces subclinical disease and minimizes stress factors.

Polystat sometimes is compared with additives that only prevent coccidiosis, or that only control worms, or that only stimulate growth. None of these comparisons can be valid, for Polystat is more than a coccidiostat, more than a worm preventive, more than a growth stimulant. Polystat is in fact many feed additives in one!

I know your customers will be enthusiastic about the broad disease protection Polystat affords.

I believe you too will appreciate the broad-range benefits of Polystat. It simplifies your feed-additive program. You do not need to include a separate coccidiostat, a separate wormer, or a separate growth stimulant. With Polystat, you have all in one — an additive that improves the efficiency of your poultry feeds. It's worth more because it does more.

This has been but a brief new look at Polystat. To get the full picture, I invite you to write for Polystat Feed Manufacturers Guide No. 7-A.

Sincerely,

John H. Salsbury D.V.M.

Vice President and General Manager

DR. SALSBURY'S LABORATORIES, Charles City, Iowa

recommend, promote and profit from Dr. Salsbury's complete line of poultry medicines

Dr. SALSBURY'S

Shortly before the Civil War, Sen. Robert Toombs, a Georgian, went on a speaking tour, urging citizens to vote for secession. Toombs was a dramatic orator. At the climax of one of his speeches, he declared: "Why, we can whip those Yankees with corn stalks!" After the war, with Georgia in ruins, Toombs was again running for the Senate. During one of his campaign orations, a man yelled from the crowd, "Remember, Bob, when you wanted us to secede —you told us we could whip those Yankees with corn stalks." Toombs shot back: "Yes, I said that—and we coulda done it, too. But those confounded Yankees wouldn't fight us with corn stalks!"

◆ ◆ ◆

Television has become a modern educational asset to our children. They can now see a gangster massacre every evening before saying their prayers at bed time.

◆ ◆ ◆

The new Sunday School teacher had just finished a lesson on the Ten Commandments and was rather pleased with the children's response. "And now," said she, "let's have a little memory test. Who can recite a Commandment that has only four words in it?"

A hand shot up immediately. "Yes, Paul?" said the teacher.

"Keep off the grass."

◆ ◆ ◆

When the meek inherit the earth, the national debt will probably keep them that way for eternity.

◆ ◆ ◆

A prim old Quaker lady was driving her new car when suddenly a heavy truck rammed into her front fender, wrecking the whole front end of the car. Infuriated, the lady managed to control herself only by remembering her Quaker upbringing. She got out and walked over to the driver. "When thee gets home to thy kennel tonight," she said, "I hope thy mother bites thee."

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The only tested, proven, plasmolized Torula Yeast. Rich in Amino Acids, minerals & Vitamins. Write for the booklet about Torafeed's results in the rumen at Iowa State College.

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Red Star Live Yeast. Highly active. Fine texture. Of such high quality it is used for human consumption.

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AT WISCONSIN CONFERENCE—Among those who participated in the seventh annual Nutrition School for Feed Men, held Aug. 13-14 at the University of Wisconsin, Madison, were (from left to right): Dr. Gustav Bohstedt, department of animal husbandry and chairman of the conference; Dr. L. D. Matterson, department of poultry science, University of Connecticut; Dr. J. W. Cunkelman, chief veterinarian, Swift & Co.; Dr. Robert H. Grummer, department of animal husbandry; Dr. L. E. Hanson, department of animal husbandry, University of Minnesota; Dr. Paul H. Phillips, department of biochemistry; G. M. Werner, department of dairy husbandry; Dr. C. W. Burch, department of veterinary science; Dr. Alice I. Goldsby, department of veterinary science; Dr. Milton L. Sunde, department of poultry husbandry; Dr. H. R. Bird, department of poultry husbandry, and J. G. Halpin, professor emeritus at the university.

WISCONSIN NUTRITION SCHOOL

(Continued from page 4)

chicks. Whether or not they ever find a place in commercial feeds must, of course, depend on much additional experimental work."

Effects of Adenosine

In reporting on the growth promoting effect of adenosine, Dr. F. M. Strong said that this substance probably would not be of benefit at present as an additive to practical rations for chicks.

He explained that adenosine is a component of all living tissues. In studies on the nature of unidentified chick vitamins, antibiotics were omitted from a basal diet and the birds were deliberately infected with intestinal microorganisms.

Growth on the purified basal diet was rather poor, but addition of natural supplements such as fish solubles, dried whey or fermentation residues caused good weight increases. Efforts were made to identify the growth stimulating substance in streptomycin fermentation residues, and at one stage in the purification process, colorless crystals were obtained which proved to be adenosine.

When adenosine was fed to the chicks intentionally infected, Dr. Strong said that growth responses averaging 18% were obtained. The growth response from adenosine was somewhat variable and was never as great as that produced by fish solubles.

May Be Factor

Addition of both adenosine and fish solubles to the basal diet gave no better growth than the same mixture without the adenosine. It thus seems possible that adenosine may be one of several growth-stimulating materials in fish solubles, Dr. Strong stated.

The response obtained was only apparent as an increase from a very poor growth level, Dr. Strong pointed out.

"Nevertheless, the results suggest quite strongly that adenosine has some role in chick nutrition and practical benefits may well result from its use in conjunction with other, still unidentified chick growth factors, if and when these become available in pure form," he concluded.

Protein-Energy Relationship

Reporting on studies of the protein-energy relationship in poultry rations, Dr. Sunde stressed the importance of this ratio but also pointed out that these high cost ingredients should be fed at an optimum efficiency level.

He cited work done at Wisconsin on the energy-protein ratios for young chicks, turkey poults, laying hens and pheasants.

The high energy in rations is obtained through the use of fats, Dr. Sunde explained. There are a number of different types of animal fats, and also some materials of plant origin which are suitable for incorporation into poultry feeds.

Reviewing early work done with chicks, Dr. Sunde said that those experiments showed that if the energy level is too high and the protein level too low, growth depression results. Feather picking is also observed. If the energy level is too low and the protein level too high, then poor growth and poor feed utilization results.

"Results with growing replacement pullets from 10-20 weeks suggest that levels of protein as low as 12% are adequate during that period," Dr. Sunde said. "Ratios as wide as 80 were employed and were tolerated well by these pullets."

Turkey Poults

Turning to turkey poults, Dr. Sunde said that the growth response of turkey poults to the additions of fat are more pronounced than with chicks.

In an experiment it was found that as the caloric content of the diet was increased beyond 990, the rate of growth decreased slightly when the 28% protein was fed. However, efficiency continued to improve with even the highest energy ration used. When a 32% protein diet was fed at different energy levels, the growth rate improved up until about 1,045 calories were used per pound. Again efficiency increase when as many as 1,205 calories were provided per pound. This ration included 20% of added fat.

The ratio of calories to protein that gave the best feed conversion with a 28% protein was 41, and with the 32% protein it was 38.

"Whether or not even higher ratios would be better from an efficiency standpoint," he said, "it is impossible to indicate from these data. We certainly have gone far beyond the practical level with our present feeders and feed handling equipment."

Pheasants

In a Wisconsin experiment with pheasants, Dr. Sunde said that he found with an energy level of 660 calories, about 24-28% protein was sufficient for optimum growth. With 800 or 940, 32% protein was satisfactory from the standpoint of growth. From these findings, Dr. Sunde concluded: "Apparently for young pheasants reared in batteries, the energy content of the diet should be below 940 and the protein content high."

Laying Hens

For laying hens, Dr. Sunde said that the real relationship between protein and energy seems to be relatively unimportant. "Therefore, the use of high energy feeds for laying hens must be based entirely on ration cost and that ration's ability to convert feed into eggs."

In summarizing his points, Dr. Sunde said, "Extremely wide ratios are tolerated by the pullet between 10 and 20 weeks of its life and by the laying hen. With all ages of poultry tested, increasing the energy content of the diet improved the animal's ability to convert feed into products we can use. When we increase either the energy content or the protein content of a ration for poultry, we increase the cost of the feed. Therefore, we must feed a level of these higher cost ingredients which will increase efficiency more than it raises the cost of production. Only volumes of data on the subject will help to establish these points for any feed price situation."

Vitamin E and Antioxidants

A summary of work with vitamin E and antioxidants done at the University of Connecticut was presented by Dr. Matterson.

Assigned the task of finding a practical answer to the problem of field encephalomalacia, the university first established a breeding flock of hens on a vitamin E-low, semi-purified ration.

From studies with those hens and their offspring, Dr. Matterson said it was found that:

(1) Low levels of vitamin E intake did not affect egg production or adult mortality.

(2) Vitamin E reserves of the chick could be reduced to one third by lowering the vitamin E content of the breeder diet.

(3) Vitamin E-deficient chicks fed a vitamin E-low diet showed good growth, low mortality and no encephalomalacia in the absence of stress.

(4) As little as 1% A&D fish oil added to the E-low chick diet induced mortality from encephalomalacia.

(5) Chick mortality from encephalomalacia could be reduced 50% by adding vitamin E to the breeder diet.

(6) Fertility was increased by vitamin E.

(7) The degree of encephalomalacia induced by a fish oil was directly related to the amount of unsaturated fatty acids found in the oil. Although unsaturated fats and fats that were turning rancid would induce encephalomalacia, completely rancid fats were innocuous.

When DPPD was fed to chicks along with the encephalomalacia-producing diet, it was found to be as effective at the level fed (0.1%) as was vitamin E in preventing encephalomalacia, Dr. Matterson said.

Other Value

"The studies on the value of antioxidants in preventing experimentally induced encephalomalacia suggest that antioxidants may have a practical place in poultry rations for purposes other than as an aid in preventing the development of encephalomalacia."

He said that when DPPD is incorporated in a ration containing fish oils, storage of vitamin A in the liver is approximately five times greater than if no DPPD is added. He also cited work indicating that the use of antioxidants in processing fish meal can improve the availability of protein from 85% to 91%.

Since DPPD has been ordered withdrawn from the market by the Food & Drug Administration, Dr. Matterson offered data comparing DPPD with other antioxidants.

Experiments suggest, Dr. Matterson said, that Santoquin will be a very effective antioxidants to use in poultry rations. FDA approval must be obtained first.

"Although the evidence suggests that BHT is not wholly the equivalent of DPPD, the magnitude of its effectiveness in poultry rations is such that its use is recommended wherever DPPD has previously been used," he stated.

Summary

In summary, the speaker emphasized the following points:

(1) Vitamin E supplements have a definite place in breeder rations; they increase fertility and hatchability.

(2) Antioxidants supplement natural sources of vitamin E and retard destruction of the fat soluble vitamins in mixed feeds.

(3) Antioxidants improve the utilization of vitamin A from fish oils and pro-vitamin A from alfalfa and, presumably, cereal grains.

(4) Antioxidants aid in the development of good shank and skin color.

(5) Antioxidants prevent the development of encephalomalacia.

Coccidiosis

Dr. Goldsby gave the feed men information on the coccidiosis problem, explaining the life cycle of the organism causing the disease, the symptoms of birds stricken with it, and means of controlling it. She said control of coccidiosis is worthwhile, too, since it costs poultry raisers about $30 million a year.

Coccidiosis usually infects only the intestine of a chicken. The coccidial organisms are passed in the droppings and infect other birds of the flock in a short time.

"It is known that all birds reared on litter or in farm yards are exposed to coccidiosis during the first 12 to 14 weeks of life. Those birds which survive the outbreak develop an immunity against the particular kind of coccidiosis with which they have been infected."

The approach commonly used in controlling the disease, Dr. Goldsby said, is to hold down the number if coccidia infecting each bird until an immunity develops. This is done by using good management practices and feeding an effective drug to decrease the number of organisms passed in the droppings.

Vaccination Method

A vaccination method, in which a few infective coccidia of all the more pathogenic forms are given to the flock in the feed, is effective, she said. This method has two advantages—there is certainty that all the birds will develop immunity within 21 days, and after this time all medication to control coccidiosis can be discontinued.

The drugs on the commercial market which are most used to control coccidiosis are Nicarbazin, sulfaquinoxaline, 3-nitro 4-hydroxy-phenylarsonic acid, nitrofurazone and nitrophenide. All of these drugs have essentially the same mode of action and produce good results when handled properly, Dr. Goldsby commented.

"Sulfaquinoxaline is probably the safest of all these products because of its relatively wide margin of safety," she stated.

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Chicago: Demand fair; supply plentiful; straight A feeding oil, with 10,000 units vitamin A per gram 7½@9¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Seattle: Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

Denver: Demand fair; supply ample; trend unchanged; 2,250 A 350 D 21¢ lb.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

Minneapolis: 10,000 A 29¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

New York: Trend steady; price per lb. in 55 gal. drums (413 to 420 lb.): 300 ICU, 750 A 13½@15½¢, 1,500 A 15½@17¢, 2,250 A 17½@20¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19½¢, 3,000 A 20@21½¢; f.o.b. Massachusetts, New York or Pennsylvania.

ALFALFA FEED

Seattle: Demand slow; trend steady; supply good; 15% protein suncured $44 ton, delivered; 136,000 A unit dehydrated $61 ton, delivered.

Memphis: Demand poor; trend steady; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $41.75.

Chicago: Demand fair; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $45.50@46.

Kansas City: Higher trend continues with demand fairly good and offerings light; straight offerings out of Kansas practically nominal; 17% dehydrated alfalfa meal with 100,000 units vitamin A guaranteed on arrival, straight grades $40@40.50, burlaps, Kansas City; $40.50@41, papers, Kansas City; blended meal $43, sacked, Kansas City; 125,000 A 18% meal $46, sacked, Kansas City; 17% 100,000 A pellets $39, Kansas City; No. 1 fine ground suncured $41@42, sacked, Kansas City; No. 1 ¼-in. $39@40, sacked, Kansas City.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, papers $40, burlaps $39.

Minneapolis: Prices were strong, with trading moderate. Quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $44@48.75, granules and oil treated $45.50@47.75; 18% dehydrated, 125,000 units of vitamin A guaranteed $51.75, granules and oil treated $50.75.

Denver: Demand fair; trend steady; supply ample; 100,000 A, 17% $38.

Buffalo: Demand fair; trend steady to higher; supply adequate; $53, sacked, Boston.

Boston: Demand fair; supply adequate; dehydrated, 17% $49.75@50.75; suncured, 13% $57.75.

Ft. Worth: Demand good; offerings sufficient on 100,000 A; trend strong; no offerings 150,000 A on account of drouth and hot weather; Nebraska-Kansas origin, dehydrated 17% protein, 100,000 A $51.

Philadelphia: Demand dull; supply fair; 17% dehydrated $51.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $47.13@51; 13% fine suncured $34@38.

New Orleans: Demand fair; trend higher; supply ample; meal, 17% dehydrated, vitamin A guaranteed $46@48; non-guaranteed $44@46, 15% $42@44.

St. Louis: Demand fair; trend steady to firm; supply ample; dehydrated, 17%, 100,000 A $42.50 ton; suncured No. 1 fine ground, 13% $41.50 ton, f.o.b. St. Louis.

Los Angeles: Demand improved; trend steady; supply ample; 15% suncured $38; 17% dehydrated $44.

ALFALFA PELLETS

Denver: Demand fair; trend steady; supply ample; 100,000 A, 17% $41.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A, bulk $38.

ANIMAL FATS (STABILIZED)

Chicago: Demand firm; supply short; bleachable fancy tallow, tank truck or carlots 6¾¢ lb.; yellow grease 6¢.

Kansas City: Demand good; offerings fair; prime tallow 6¼¢ lb.; bleachable fancy tallow 6⅛¢ lb.

St. Paul: Market sharply higher, with further advances anticipated. Quotations: bleachable fancy tallow 6⅝¢ lb., f.o.b. producers' plants.

Denver: Demand slow; trend steady; supply ample; prime tallow 6⅛¢.

Ft. Worth: Demand good; trend strong; supply sufficient; prime tallow, tank cars 6⅛¢ lb.; drums $@8⅛¢ lb., f.o.b. north Texas packing plants, with returnable drums.

San Francisco: Demand fair; supply ample; bleachable fancy 7⅛¢ lb.; yellow grease 6⅛¢ lb.

Louisville: Demand fair; trend firm; supply normal; bleachable white 6⅝¢; white 7¢; yellow 6¾¢.

Los Angeles: Demand fair; trend steady; supply ample; bleachable fancy tallow 7¢; yellow grease 6¼¢.

BARLEY FEED

Baltimore: Demand good; supply light; $51.50.

Chicago: Demand good; supply light; $42.

Seattle: Demand and supply good; trend steady; whole barley $59 ton, ground barley $59 ton, rolled barley $60 ton, all ex-warehouse, l.c.l.

Boston: Demand slow; supply adequate; quick $51.75.

Philadelphia: Demand dull; supply fair; pulverized $51.

Ogden: Supply average; rolled $48@53; whole barley $41@46.

Milwaukee: Demand good; supply fair; needles $1.02@1.12; ground $18.

New Orleans: Demand fair; trend firm; supply adequate; pulverized $49@51.

San Francisco: Demand fair; supply ample; rolled $61, ground $60.

Los Angeles: Demand fair; trend steady; supply ample; standard rolled $3.13; standard ground $3.09.

BENTONITE (SODIUM)

Denver: Demand fair; trend steady; supply ample; $26.50 ton, 200 mesh, f.o.b. Denver, warehouse.

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $15.50; fine granular, 80-100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Belle Fourch, S.D., minimum 30-ton carlot: 80 granular $12.50 net; 200 mesh fine $12.25 net.

BLOOD FLOUR

New Orleans: Demand fair; trend firm; supply ample; $77.50@80, local plants.

Louisville: Demand good; trend stronger; supply fair; $77.50@82.50.

BLOOD MEAL

Chicago: Demand fair; supply adequate; $100@120 ton, guaranteed 80% protein.

Seattle: Demand slow; trend easy; supply good; $80 ton, ex-warehouse, l.c.l.

Ogden: Supply normal; $105 ton, in 100-lb. bags, f.o.b. Ogden.

Cincinnati: Demand fair; trend steady to easy; supply adequate; $112.

New Orleans: Demand slow; supply ample; trend steady $77.50@80, local plants.

San Francisco: Demand slow; supply ample; $4.75 a unit of ammonia.

Louisville: Demand good; trend stronger; supply fair; $77.50@82.50.

Los Angeles: Demand slow; supply ample; trend steady; $4.10 a unit of ammonia.

BONE MEAL (STEAMED)

Chicago: Demand fair; supply adequate; $65@77.50.

Seattle: Demand slack; trend steady; supply good; $85 ton, ex-warehouse, l.c.l.

Ft. Worth: Demand quiet; supply adequate; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Omaha: Demand good; supply adequate; no quotations.

St. Paul: Market unchanged at $72.50 in large lots.

Denver: Demand fair; trend steady; supply ample; $77.50, f.o.b. West Coast.

Buffalo: Demand good; trend steady; supply ample; $80 ton, sacked.

Boston: Demand and supply steady; $80.

Cincinnati: Demand fair; trend steady; supply adequate; $75 ton, sacked, f.o.b. Cincinnati.

New Orleans: Demand fair; trend steady; supply adequate; $77.50@82.50.

San Francisco: Demand good; supply ample; $82.50.

Louisville: Demand good; trend stronger; supply fair; $78@80 ton.

Los Angeles: Demand fair; trend steady; supply ample; domestic $88.50.

St. Louis: Demand good; trend steady; supply adequate; $85@90 ton, sacked.

BREWERS DRIED GRAINS

Philadelphia: Demand dull; supply light; $54.

Chicago: Demand slow; supply adequate; 26% $43.50@44.

Ft. Worth: Demand fair; offerings light; 25% $50@51, August shipment, delivered Ft. Worth.

Buffalo: Demand fair; trend steady to lower; supply good; $47, bulk, Boston.

Boston: Demand and supply fair; 26% $54@55; 22% $53.

Cincinnati: Demand fair; trend steady; supply adequate; $45@51.

New Orleans: Demand spotty; supply adequate; trend steady; 26% $47@50.

Louisville: Demand good; trend firm; supply ample; $47 ton.

St. Louis: Demand slow; trend steady; supply ample; $37 ton bulk, $43 ton sacked.

Los Angeles: Demand fair; trend steady; supply ample; f.o.b. Van Nuys $48 bulk, $54 sacked.

Milwaukee: Demand good; supply fair; $45, Milwaukee.

BREWERS DRIED YEAST

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10¼@12½¢ l.c.l.

San Francisco: Demand fair; supply good; 10¢ lb.

Omaha: Demand good; supply adequate; 11¢ lb.

Denver: Demand fair; supply ample, trend unchanged; $11 cwt.

Buffalo: Demand good; trend steady; supply limited; $10.45 cwt.

Boston: Demand and supply steady; 11½¢ lb.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11½¢.

New York: Carlots 9½¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10½¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

St. Louis: Demand fair; supply adequate; 10¢ lb. in carlots; 10¼¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11⅛@12¢ lb. in less than ton lots.

Milwaukee: Demand good; supply limited; 10½@11½¢ lb. in carlots; 10⅝@12½¢ lb., l.c.l.

Louisville: Demand fair; trend steady; supply ample; 10¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; 9½¢.

BUTTERMILK-CONDENSED

Chicago: Demand and supply fair; $3.25 @3.50 cwt. in carlots.

Philadelphia: Demand dull; supply fair; $4.25, barrels.

Ogden: Supply normal; $4.90, 100-lb. drum.

New Orleans: Demand slow; supply ample; trend easier; $4.25@4.50.

San Francisco: Demand fair; supply good; $5 cwt.

Louisville: Demand fair; trend steady; supply normal; $4.25 cwt.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.50; large barrels $4.75.

Boston: Demand fair; supply light; 3.75¢ lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14 ton, ex-warehouse, l.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Minneapolis: Plain $11; iodized (½ lb. KI per ton) $14.45; iodized manganesed $15.90, in 100-lb. bags.

Chicago: Plain $8.90 ton in 100-lb. bags, delivered.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

CHARCOAL

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Boston: Demand and supply light; $95.

New Orleans: Demand fair; trend steady; supply ample; 40-lb. bags oak $2.55@2.75; poultry $2.65@2.80 in 50-lb. bags.

San Francisco: Demand steady; supply ample; $54.50.

Los Angeles: Demand slow; supply ample; trend steady; poultry charcoal, oak $3.34, 40-lb. bags in ton lots.

COCONUT MEAL

Seattle: Demand slow; trend firm; supply fair; $72 ton, ex-dock, 30-day arrival from Philippines.

San Francisco: Demand fair; supply ample; solvent $59, expeller $67.

Los Angeles: Demand fair; trend steady; supply light; cake, ex-dock, August $71.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

New York: Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14½@15½¢, 1,500 A 16½@19¢, 2,250 A 18½@21¢, 3,000 A 21½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

CONDENSED FISH SOLUBLES

New York: Demand good; trend steady; supply limited; 3¾¢ lb., f.o.b. eastern shore.

Boston: Demand good; supply adequate; 3¼¢ lb.

New Orleans: Demand good; supply limited; trend steady; 50% solids menhaden $72.50@75.

Los Angeles: Demand good; supply adequate; trend steady; 4¢.

CORN GERM MEAL

St. Louis: Demand slow; trend steady; supply adequate; $43 ton bulk, $48 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.08, meal $77.08.
Atlanta: Feed $58.69, meal $86.49.
Birmingham: Feed $56.74, meal $84.74.
Boston: Feed $55.61, meal $83.61.
Chicago: Feed $45, meal $73.
Cleveland: Feed $52.31, meal $80.31.
Denver: Feed $54.37, meal $82.37.
Ft. Worth: Feed $52.93, meal $80.93.
Indianapolis: Feed $49.74, meal $77.74.
Kansas City: Feed $45, meal $73.
Louisville: Feed $49.30, meal $77.39.
New Orleans: Feed $54.27, meal $82.27.
New York: Feed $55.20, meal $83.20.
Norfolk: Feed $54.37, meal $82.37.
Philadelphia: Feed $54.78, meal $82.78.
Pittsburgh: Feed $52.93, meal $80.73.
St. Louis: Feed $45, meal $73.

CORN OIL MEAL

Cincinnati: Demand fair; trend steady; supply adequate; $53@53.75.

Louisville: Demand slow; trend steady; supply ample; $53.10.

COTTONSEED OIL MEAL

Chicago: Demand slow; supply scarce; hydraulic, nominally $72.50@73; solvent $72.50@73.

Kansas City: Market firm with demand fair to good; $64.50@65, sacked, Memphis, for old process; $60.50@61, sacked, Memphis, for solvent.

Ft. Worth: Demand good; offerings limited; carlots, 41% old process $69, f.o.b. central Texas mills; solvent 41% low gossypol $65.50, delivered Ft. Worth, immediate shipment; pellets $2 additional.

Ogden: Supply normal; 41% $68@73.

Cincinnati: Demand fair; trend steady; supply somewhat limited; $70@71.50.

Wichita: Demand slow; supply sufficient; 41% $64.50.

New Orleans: Demand fair; trend steady; supply ample; 41% old process $81.50@84.

San Francisco: Demand good; supply ample; expeller $70.50, solvent $67.50.

Louisville: Demand fair; trend steady; supply ample; old process $75; new process $73.

Los Angeles: Demand fair; trend steady; supply ample; $64@65.

Denver: Demand fair; trend strong; supply ample; $69.

Atlanta: Demand fair; trend steady; supply limited; 41% $62, sacked, immediate.

Omaha: Demand fair; supply adequate; 41% solvent $72.

Buffalo: Demand poor; trend steady; supply adequate; $72.75, sacked, Boston.

Boston: Demand slow; supply good; $73.35.

Philadelphia: Demand dull; supply fair; $76.

D ACTIVATED ANIMAL STEROL, POWDERED

Kansas City: Demand fair; offerings adequate; 10¼@11¢ lb.

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania; Delaware and New York.

D ACTIVATED PLANT STEROL, POWDERED

Chicago: Demand good; supply adequate; 4,000,000 U.S.P. units per lb., 15¢ lb.; ton lots and less 17¢; 12,000,000 units per lb., 5 tons to a carload 25¢ lb.; ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Tupelo, Miss.: $49.50.
Houston: 19% $68.50.
Wales, Tenn.: $64.10.
Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 24%, maximum fluorine .17% $53 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $55 in bulk.

DICALCIUM PHOSPHATE

Denver: Demand fair; trend unchanged; supply ample; $83.50, f.o.b. plant, St. Louis.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $88.64 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $94.50, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwall bags.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Columbia, Tenn.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $79.55 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis; bulk $3 ton less.

East St. Louis: 18½% phosphorus $83.25, bagged, f.o.b. cars.

Chicago: Demand fair; supplies adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville, less than 20,000 lb. $104.50; freight equalized with St. Louis, Trenton, Mich., and Godwin, Tenn.; bulk boxcars or hoppers, $3 net ton less than bagged material.

Bonnie, Fla.: Demand fair; supply adequate; minimum phosphorus 18½% granular $79.55. Freight equalized with closest dicalcium phosphate producing point, carload basis.

Cincinnati: 18% phosphorus $88@89.

DISTILLERS DRIED GRAINS

Philadelphia: Demand dull; supply nil; no quotations.

Cincinnati: Demand fair; trend steady; supply limited; $55@58.

Buffalo: Demand good; trend steady to higher; supply poor; too scarce to quote.

Boston: Demand good; supply tight; dark $66@67, light $65.

San Francisco: Demand fair; supply ample $57.50, solubles $59.

Louisville: Demand good; trend steady; supply light; production very light until October or later; prices for the balance of August and September, but subject to change: bourbon grains, light $56.50, dark $57.50, solubles $77.

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DRIED BEET PULP

Seattle: Demand slow; trend steady; supply limited; $56 ton, delivered, carlots.

Ft. Worth: Demand slow; supply scarce; carlotes, 50-lb. papers $65@66, delivered Ft. Worth, August shipment.

Ogden: Supply normal; $46@50 ton.

Milwaukee: Demand and supply fair; molasses $61.50; plain $62.50.

Boston: Demand lagging with pastures good; plain pulp offered at $71.50 in papers and $73 in burlap; high protein pulp $70.50, papers.

Chicago: Plain pulp $64, molasses pulp $57.60.

Cincinnati: Demand fair; trend steady; supply adequate; $64@69.

Buffalo: Demand poor; trend just steady; supply fair; $74, sacked, in 100-lb. burlap bags, Boston.

Atlanta: Demand slow; trend steady; supply limited; $71.50, sacked, immediate.

New Orleans: Demand fair; trend steady; supply adequate; $58@61.50.

Los Angeles: Demand and trend steady; supply adequate; paper bags $52.71.

San Francisco: Demand good; supply fair; $52.35.

DRIED BUTTERMILK

Chicago: Demand fair; supply adequate; medium acid $8.25@8.75, sweet cream $9 @9.50 cwt. in carlots.

Ft. Worth: Demand very slow; supply light; local production $12 cwt., f.o.b. Ft. Worth.

Buffalo: Demand good; trend firmer; supply limited; $9.65 cwt.

Boston: Demand poor; supply good; 10½¢ lb.

Minneapolis: Market unchanged at $8.50 @9 cwt.

Ogden: Supply normal; $8.65, 100-lb. bag.

Wichita: Demand slow; supply adequate; $8.25 cwt.

New Orleans: Demand good; trend firmer; supply limited; $9.45@10.50.

San Francisco: Demand fair; supply ample; 11¢ lb.

Milwaukee: Demand fair; supply fair; $10.75 cwt.

Louisville: Demand fair; trend steady; supply normal; 9@9½¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; 11¢. a

DRIED CITRUS PULP

New Orleans: Demand good; supply adequate; trend steady; $47@50.

San Francisco: Demand good; supply fair; meal $50.

Atlanta: Demand fair for pulp, slow for meal; supplies ample on pulp, limited on meal; trend steady; pulp $43, meal $40.50, sacked, immediate.

Buffalo: Demand poor; trend steady; supply fair; $36, sacked, f.o.b. Florida points.

Boston: Demand light; supply adequate; $55.

Los Angeles: Demand active; supply adequate; trend steady; f.o.b. southern California producers' plants: orange $42 sacked, $37 bulk.

DRIED SKIM MILK

Chicago: Demand light; supply adequate; $10.75@11.25 cwt. in carlots.

Philadelphia: Demand dull; supply fair; $11.50.

Cincinnati: Demand fair; trend steady; supply adequate; 11@12¢.

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Manufacturers of Dehydrated Alfalfa Meal
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A. J. Landby, Warroad, Manager
Office Phone 27 Res. Phone 153
Mill at Swift, Minn.

Milwaukee: Demand and supply fair; $11.75.

Minneapolis: Market steady at $10.50@ 11.50 cwt.

Buffalo: Demand good; trend firmer; supply limited; $11 cwt.

Boston: Demand poor; supply plentiful; 11@12¢ lb.

New Orleans: Demand good; trend firm; supply ample; $11@11.50 cwt.

San Francisco: Demand and supply fair; 13⅜¢ lb.

Louisville: Demand fair; trend firm; supply ample; 11½@12¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; $13.75.

DRIED WHEY

Kansas City: Demand fair; trend steady; straight grade $6 cwt., delivered, or $5, f.o.b. plant plus freight, whichever is lower; partially delactosed $6.25.

Seattle: Demand slow; trend steady; supply good; $6.50 cwt., ex-warehouse, Le.l.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

Philadelphia: Demand dull; supply fair; $6 cwt.

Ogden: Supply normal; $6.90, 100-lb. bag.

Cincinnati: Demand fair; trend steady; supply adequate; $5.25 cwt.

New Orleans: Demand poor; supply adequate; trend steady; $4@6.50 cwt.

Chicago: Demand steady; supply adequate; $5.20 cwt. in carlots.

San Francisco: Demand steady; supply good; $6 cwt.

Louisville: Demand fair; trend steady; supply normal; 5½@6¼¢ lb.

Los Angeles: Demand fair; trend steady; supply ample; $5.45, plants; $6, f.o.b. Los Angeles warehouse.

Buffalo: Demand fair; trend steady; supply adequate; $6 cwt., delivered.

Boston: Demand poor; supply plentiful; 5.6¢ lb.

Denver: Demand fair; trend steady; supply ample; $7 cwt.; $6 carload lots.

Minneapolis: Market steady at $5@5.25 cwt.

FEATHER MEAL (HYDROLYZED)

Boston: Demand slow; supply good; $80, f.o.b. shipping point for minimum 85% crude protein, 70% digestible.

FISH MEAL

Seattle: Demand slow; trend steady; supply good; $2 a unit protein, ex-dock, carlots.

Chicago: Demand moderate; supply short; menhaden fish meal, 60% protein, f.o.b. East Coast $130@133 ton; 60% blended West Coast $126@126.50; Northwest herring-salmon blend $126@126.50; herring meal, 73% protein $2@2.05 a unit of protein.

Ft. Worth: Demand good; offerings limited; 60% protein menhaden meal $136; menhaden scrap $131, f.o.b. Port Arthur; Canadian herring fullmeal $2 a unit of protein, f.o.b. cars, northwestern Canada.

Ogden: Supply normal; $2.20 a unit, f.o.b. Coast; 65% $171@173.

Cincinnati: Demand fair; trend steady; supply adequate; $150@155.

Milwaukee: Demand and supply fair; 60% $159.

Minneapolis: Market steady to stronger; 70% Canadian herring meal $2 a unit of protein, West Coast; 60% meal $145@ 150, Minneapolis.

Boston: Demand fair; supply lighter; $133.

Denver: Demand fair; trend steady; supply ample; 74% herring $2.05 a unit.

Atlanta: Demand fair; trend steady; supply ample; 60% $143, sacked, immediate.

Buffalo: Demand good; trend steady; supply rather limited; 60% protein menhaden $142 ton, bulk; $145, sacked.

New Orleans: Demand good; supply light; trend steady; 60% menhaden $130 in burlaps; scrap $126.

San Francisco: Demand slow; supply ample; $2.25 a unit of protein.

Louisville: Demand slow; trend firm; supply normal; $150 ton.

Los Angeles: Demand slow; trend weaker; supply plentiful; $2.25 a unit of protein.

HAY

Seattle: Demand fair; trend steady; supply good; $35 ton, truck lots, U.S. No. 2 green.

Ft. Worth: Demand fair; light offerings; carlots, baled, No. 1 alfalfa $44@46, No. 2 $42@44; prairie No. 1 $34@36; Johnson grass No. 2 $32@34, delivered TCP.

Philadelphia: Demand dull; supply fair; $28.

Buffalo: Demand very weak; No. 2 timothy $16@18 ton; No. 3 alfalfa $25@28; straw, strong $12@16.

Denver: Demand fair; trend steady; supply ample; $19@21.

Boston: Demand fair; supply dwindling; No. 1 timothy $40; No. 2 $36@37.

New York: Demand and supply good; trend steady; No. 1 timothy $36@42 ton; No. 2 timothy $30@34 ton; No. 3 timothy $26@29 ton.

Ogden: Supply normal; $1 a bale; $18@ 20 ton in the barn.

Wichita: Demand slow; supply sufficient; prairie $16@22, alfalfa $22.

Louisville: Demand dull; trend weak; supply good; No. 1 hay, any variety $20@22 ton, No. 2 $18@20; straw $16.

Los Angeles: Demand improved; trend steady; supply ample; U.S. No. 1 $27@29; U.S. No. 2, leafy $25@26; U.S. No. 2, green $25@26; U.S. No. 2 $23@24.

St. Louis: Demand slow; trend steady; supply ample; alfalfa, first and second cutting, green $14 ton; alfalfa, first and second cutting, brown $12 ton; timothy, old crop $25@28 ton; prairie, new crop, Kansas $27@28 ton; wheat straw $14@15 ton.

HOMINY FEED

Chicago: Demand fair; supply light; $56 @56.50.

Kansas City: A little easier with offerings slightly improved; $55.50, sacked, Kansas City, for yellow.

Boston: Demand slow; supply adequate; $51.50, bulk.

Buffalo: Demand good; trend lower; supply adequate; $60.50, bulk, September, Boston.

Memphis: Demand nil; trend steady; supply ample; white $60.50, yellow $61.

Seattle: Demand fair; trend steady; supply good; $71 ton, delivered, carlots.

Cincinnati: Demand fair; trend steady; supply adequate; $58.50@59.

Milwaukee: Demand good; supply tight; $57.50, sacked, Milwaukee.

New Orleans: Demand fair; trend higher; supply light; $64@67.

Louisville: Demand fair; trend steady; supply normal; $58.50 ton.

LINSEED OIL MEAL

Seattle: Demand slow; trend steady; supply good; $82 ton, delivered, carlots, 34% protein.

Kansas City: Market continues steady with demand only fair in this area; $54.50, bulk, Minneapolis, for solvent.

Chicago: Demand slow; supply adequate; solvent $64.50@65; expeller $72.50@73.

Ft. Worth: Demand slow; supply adequate; carlots, 36% or better, August $77.05, September forward $75.55, delivered Ft. Worth; pellets $2.50 premium.

Philadelphia: Demand dull; supply fair; $75.

Minneapolis: Market tight for nearby, with 36% quoted at $54.50, bulk, Minneapolis.

Omaha: Demand fair; supply adequate; 34% expeller $76.50, pellets $79; 36% solvent $68.50, pellets $71.

Boston: Demand slow; supply spotty; $75.27.

Denver: Demand fair; trend steady; supply ample; $76.

Cincinnati: Demand fair; trend steady; supply adequate; new process $70.50@71; old process $75.50@76.

Milwaukee: Demand good; supply fair; old process $74.25; new process $64.25.

Wichita: Demand fair; supply sufficient; 34% $72.50.

New Orleans: Demand good; trend higher; supply limited; 32% or better $73.50 @76.

San Francisco: Demand and supply fair; $71.

Louisville: Demand fair; trend stronger; supply ample; old process $80.60 ton; new process $71.60.

Los Angeles: Demand good; supply limited; trend steady; $64.

MALT SPROUTS

Chicago: Demand slow; supply adequate; No. 1 $37.50@38.

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $44.

Boston: Demand slow; supply adequate; $40.85, f.o.b. Buffalo.

Milwaukee: Demand good; supply fair; oddweights $38; evenweights $40.

New Orleans: Demand good; trend higher; supply light; $38.50@40.75.

St. Louis: Demand good; trend firm; supply ample; No. 1 bulk $31 ton, No. 1 sacked $36 ton, No. 2 bulk $35 ton.

MEAT SCRAPS

Kansas City: Trend steady; demand good; offerings fair; 50% meat and bone scraps $82.50@83, sacked, Kansas City.

Seattle: Demand fair; trend easy; supply good; $77.50 ton, ex-warehouse, 50% protein.

Ft. Worth: Demand fair; supply ample; meat and bone, 50% $75@76, f.o.b. or delivered Ft. Worth.

St. Paul: Market unchanged at $90 for 50% meat and bone scraps.

Denver: Demand good; trend steady; supply fair; $77.50, 50% protein.

Buffalo: Demand fair; trend steady; supply ample; 50% meat scraps $77.50 ton, bulk; $80, sacked.

Boston: Demand fair; supply good; $1.15 a protein unit; converted, 50% $70.

Omaha: Demand good; supply adequate; $85.

New York: Demand fair; trend lower; supply adequate; 50% $70.50, 55% $78, bulk; 50% $73, 55% $80.50, sacked.

Ogden: Supply normal; $90 ton in 100-lb. bags.

Cincinnati: Demand fair; trend steady; supply adequate; 50% $80@82 ton, sacked, f.o.b. Cincinnati.

Wichita: Demand good; supply insufficient; 50% $82.50, f.o.b. plant; 55%, no quotations, no offerings.

New Orleans: Demand fair; trend steady; supply adequate; 50% meat and bone $83@ 85, local plants.

Chicago: Demand fair; supply adequate; 50% protein $75@82.50; 55% $82.50.

San Francisco: Demand good; supply ample; $1.75 a unit of protein.

Louisville: Demand good; trend stronger; supply fair; $80@85 ton.

St. Louis: Demand fair; trend steady; supply ample; 50% $78.50@82 ton bulk, $83.50@87 ton in paper sacks, $82.50@86 ton in burlap sacks.

Los Angeles: Demand fair; trend steady; supply ample; $1.85 a unit of protein.

MILLET

St. Louis: Demand slow; trend steady; supply ample; recleaned Early Fortune $3.55 cwt., sacked; recleaned White Proso $3.70 cwt., sacked.

MILLFEED

Minneapolis: Prices have eased off $1@2 ton, with interest limited. Quotations: bran $36.50@37, standard midds. $40@41, flour midds. $48@49, red dog $54@55.

Kansas City: Trend has been steady to slightly stronger since the weekend; offerings moderate and demand fairly active; bran $36.50@37, sacked, Kansas City; shorts $45.50@46, sacked, Kansas City, and middlings $38.50@39, bulk, Kansas City.

Wichita: Demand fair; supply offsets demand; basis Kansas City, Aug. 13: bran $36.50@37, shorts $45.50@46; bran declined $2 ton and shorts $3 ton, compared with the preceding week.

Omaha: Demand and supply good; bran $37, shorts $46; standard midds., bulk $40.

Denver: Demand slow; trend some weak-

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er; supply ample; bran $40, shorts $49, mill run $44.50.

Ft. Worth: Demand good for bran, slow for shorts; very light offerings of bran, moderate offerings of shorts; carlots, burlaps, prompt, wheat bran $46@47; gray shorts $52@53, delivered Texas common points; 50¢ lower on bran, $2 lower on shorts, compared with previous week.

Chicago: The market was somewhat weak during the period ending Aug. 15 and trading was slow. There was some interest shown out of the East, but nothing of consequence. Supplies were adequate. Bran $41.50@42, standard midds. $47@47.50, flour midds. $53@54, red dog $59@60.

St. Louis: Demand poor; trend lower; supplies building up; bran $41.25@41.75, shorts $50.25@50.75, St. Louis switching limits.

Cincinnati: Demand fair; trend steady; supply adequate; bran $47.50@48; middlings $51.25@52.

Louisville: Demand fair; trend easy; supply ample; bran $46.75, mixed feed $51.75, gray shorts $55.75, standard midds. $53.75.

Buffalo: Mixer demand continued light and sales were slow last week. Flour output remained at a relatively high level and spot supplies of millfeeds were readily available, especially bulk bran and bulk middlings. Bran declined $1.50, middlings dropped $3 and heavy feeds were unchanged. Quotations Aug. 15: bran $41.50@42.50, standard midds. $45@46, flour midds. $60@61, red dog $60@62.

New York: Trend lower; bran $50@50.50, standard midds. $56.50@57, sacked.

Boston: Demand cautious; supply adequate; bran $51.50@52, middlings $56.50.

Philadelphia: Demand spotty; supply ample; bran $49, standard midds. $54, red dog $67.50.

New Orleans: Demand fair; trend easier; supply light; bran $47.50@48; shorts $56.50@57.

Memphis: Demand poor; trend lower; supply ample; wheat bran $44, gray shorts $52.50, standard midds. $50.

Seattle: Demand slack; trend easy; supply good; $42 ton, delivered, common transit points.

San Francisco: Demand fair; supply ample; $48; red bran $52.50.

Los Angeles: Demand fair; trend weak; supply ample; mill run, Utah-Idaho billing, sacked $48.50; red bran, delivered CCP, sacked $52.50@53.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $42, middlings $47; to Denver: red bran and mill-run $49, middlings $54; to California: red bran and mill run $49.50, middlings $54.50, f.o.b. San Francisco and Los Angeles.

MINERAL FEED

Denver: 7.5% phenothiazine, 45-lb. block $4.50; 8.2% phosphorus, 50-lb. block $3.50; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $5.25; 5% phosphorus, 50-lb. block $2.65.

Sioux City: 50-lb. mineral blocks, 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Seattle: Demand slack; trend steady; supply good; competitive brands $44 ton; high phosphorus mixtures $65 ton.

Ft. Worth: Demand fair; supply ample; all-purpose granules $87, block $92, mineral phosphorus 6% granules $104, block $108; cattle sheep mineral 7% phosphorus, granules $96, block $100; hog mineral phosphorus 3¼% granules $86, phosphorus 2% $75 (all in 50-lb. paper bags).

Ogden: Supply normal; $106.50 ton in 50-lb. blocks; $96.50 ton, granular, 50-lb. bags.

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50-lb. blocks $92.50, 100-lb. bags $87.50, f.o.b. plant.

San Francisco: Demand steady; supply good; all-purpose with iodine $70.

MOLASSES

Boston: Demand seasonally slow; supply ample; 17½¢ gal. in tank cars.

Buffalo: Demand good; trend higher; supply adequate; 18¢ gal., f.o.b. Albany.

Denver: Demand fair; trend steady, but looking stronger; supply ample; 16¢.

Kansas City: Trend now steady at about 16¢ gal. for August and ½¢ higher for September position, basis New Orleans.

Seattle: Demand and trend steady; supply good; $28 ton, f.o.b. Seattle, tank car lots.

Minneapolis: Market up another 1¢ gal., with demand moderate. Quotations: 17@17½¢ gal., f.o.b. New Orleans.

Atlanta: Citrus molasses—demand good; supply limited; trend steady; $19 ton, bulk, f.o.b. Florida producing points.

Memphis: Demand poor; trend higher; supply fair; blackstrap 17½¢ gal., tank car, f.o.b. New Orleans.

Ft. Worth: Demand fair; supply moderate; blackstrap 17¢ gal., f.o.b. Houston, delivered Ft. Worth, trucks $36.87, seller's market price on date of shipment; maximum 18¢, August-September shipment.

Milwaukee: Demand good; supply fair; blackstrap 17½¢ gal., New Orleans.

New York: Demand and supply good; trend steady; blackstrap 17¢ gal., tank cars, tank wagons, f.o.b. New York.

Cincinnati: Demand fair; trend steady; supply adequate; 16¢ gal., New Orleans.

New Orleans: Demand fair; trend firm; supply adequate; 16¢ gal. in tank cars, f.o.b. New Orleans.

San Francisco: Demand and supply good; $28 ton, f.o.b. cars, Richmond, Cal.

Louisville: Demand slow; trend steady; supply normal; reports indicate higher price to become effective in September; present price 16¢ gal., tank car lots, f.o.b. Gulf ports.

Los Angeles: Demand good; supply ample; trend steady; $28, f.o.b. tank cars; $28.25, f.o.b. tank trucks, both Los Angeles harbor.

NIACIN

New York: Trend steady; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Chicago: Demand improving; supply adequate; reground oat feed $15@16; fine ground feeding oatmeal $78@80; feeding rolled oats $85@90.

Seattle: Demand steady; trend firm; supply good; feed oats $67 ton, ground oats $68 ton, rolled oats $71 ton, all ex-warehouse, t.c.l.

Memphis: Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $22.75.

Minneapolis: Prices are steady to somewhat lower, with demand described as steady to slower. Quotations: feeding rolled oats $85@89, standard pulverized $46@49.50, feeding oatmeal $72@76, reground oat feed $16@18, crimped oats $62.

Ft. Worth: Demand improved; supply sufficient; oat millfeed $52.80, reground oat millfeed $27.80.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $21; pulverized white oats $48.50@51; rolled oats $94.

New Orleans: Demand fair; trend steady; supply adequate; steam crimped oats $76@78, pulverized white oats $55@57, mixed feed oats $44@46.

Louisville: Demand fair; trend firm; supply normal; reground $22.75; rolled oats $92.75; feeding oatmeal $85.75; pulverized white oats $51.75; crimped white oats $72.75.

St. Louis: Demand fair; trend steady; supply ample; reground oat feed $16.50 in 100-lb. burlap sacks; pulverized white oats $45 ton, choice $46.

Boston: Demand steady; supply adequate; Canadian white pulverized $51, domestic $56.70; reground oat feed $20.50.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $67.50.

Philadelphia: Demand dull; supplies fair to light; pulverized white oats $53; Canadian oat feed $23, domestic $24.50.

OYSTER SHELL

Boston: Demand good; supply plentiful; $23.21 in paper.

Seattle: Demand slack; trend steady; supply good; western shell $28 ton, eastern shell $32 ton, both ex-warehouse.

Cincinnati: Demand fair; trend steady; supply adequate; $21.75.

New Orleans: Demand good; trend firm; supply adequate; $15@18, local origin.

San Francisco: Demand fair; supply ample; local $18, eastern $26.

Louisville: Demand good; trend steady; supply ample; in 80-lb. bags $21.34 ton; in 50's $21.54; in 25's $21.84.

Los Angeles: Demand fair; trend steady; supply ample; local $18.25, eastern $25.

PEANUT OIL MEAL

Milwaukee: Demand and supply fair; 26% $45.

PEAT MOSS

Seattle: Demand and trend steady; supply good; $2.90 bale, delivered, carlots, horticultural or poultry litter.

Philadelphia: Demand dull; supply fair; $2.95, f.o.b. pier.

San Francisco: Demand fair; supply ample; $3.35 bale.

Chicago: Demand fair; supply plentiful; $3.75@3.85 standard 7½ cu. ft. bale.

Boston: Demand and supply steady; $3@3.10 bale.

Los Angeles: Demand fair; trend steady; supply ample; Canadian, 6.1 cu. ft. bales $3.45 in 300-bale lots, delivered California main line points

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; trend steady; supply ample; 100% pure potassium, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225-lb. lots in leverpak drums $1.81, 100-lb. fiber drums $1.85.

New York: Trend steady; granular or crystals $1.80½ lb. in 250-lb. drum, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania; freight allowed to destination on 100-lb. drums or larger packings.

RIBOFLAVIN

New York: Trend steady; feed grade (in feed supplements): 4½¢ gram in 3.63 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Ft. Worth: Demand fair; supply moderate; carlots, rice bran $37@38, prompt shipment, f.o.b. south Texas rice mill; hulls $3@4, f.o.b. mills.

Atlanta: Demand fair; trend steady; supply limited; bran $46, sacked, immediate.

Los Angeles: Demand slow; trend steady; supply ample; bran $49.11.

San Francisco: Demand good; supply fair; bran $45, polish $48.

SCREENINGS

Minneapolis: Trade has slowed down after some fair volume of bookings earlier in the period. Quotations: country run $16@25, lights $5@10, mediums $10@25, heavies $25@35; Canadian $12, bulk, Duluth; Canadian ground $22, sacked; flax screenings $20.

Chicago: Demand moderate; supply plentiful; ground grain screenings $35; Canadian, bulk $17.

Denver: Demand fair; trend stronger; supply ample; $36.

Buffalo: Demand good; trend steady to higher; supply adequate; ground, sacked $25, New York, L&R; unground, bulk $17.75, New York.

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $21@23; barley $14@20, both bulk, delivered.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Atlanta: $18.85@19.10.
Buffalo: $23.65@23.90.
Chicago: $22.10@23.35.
Cincinnati: $21.80@22.
Des Moines: $23.60@23.85.
Kansas City: $23.20@23.45.
Memphis: $20.50@20.70.
Minneapolis: $24.25@25.55.
Philadelphia: $22.65@22.90.
St. Louis: $22.50@22.75.
Tampa: $18@18.20.
Toronto: $27.50@27.80.

SORGHUMS

Ft. Worth: Demand slow; supply sufficient; carlots, bulk, No. 2 yellow $2.40@2.45, delivered Texas common points.

Cincinnati: Demand fair; trend steady; supply adequate; $3.20.

Los Angeles: Demand fair; trend steady; supply ample; No. 2 milo, delivered CCP, prompt $2.90.

SOYBEAN OIL MEAL

Decatur: Demand slow; supply plentiful; 44% bulk, unrestricted $52.50@53.

Kansas City: After holding around a $50 low the trend has been stronger this week but interest is scattered and processors are not pressing the market with supplies; $52@52.50, bulk, Decatur, for Kansas City and West; $53.50@54, unrestricted.

Seattle: Demand and trend steady; supply good; $54.50 ton, delivered, sacked, carlots, August shipment.

Ft. Worth: Demand fair; offerings decreasing for nearby shipment; carlots, 44% $74@75 immediate; October-November-December $69@70; truck lots $68.50, delivered Ft. Worth.

Minneapolis: Prices are stronger, with shortages of beans in the area threatening to curtail production. Quotations: $50@52, bulk, Decatur.

Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $59, sacked, f.o.b. Memphis.

Philadelphia: Demand spotty; supply ample; $50, bulk, Decatur.

Ogden: Supply average; $85@90.

Cincinnati: Demand fair; trend steady to higher; supply adequate; $51@53, bulk, Decatur.

Atlanta: Demand fair; trend steady; supply ample; 44% $70, sacked, immediate.

Omaha: Demand fair; supply adequate; 44% solvent $68, 41% expeller $74.

Milwaukee: Demand good; supply fair; $53.50, bulk, Decatur.

Boston: Demand slow; supply plentiful; $50.50, bulk, Decatur.

Denver: Demand fair; trend steady; supply ample; $75.

Wichita: Demand good; supply sufficient; 44% $70, 50% $32.50, f.o.b. Wichita.

New Orleans: Demand slow; trend weaker; supply ample; 49% $71.50@73.

San Francisco: Demand fair; supply ample; $82.75.

Louisville: Demand fair; trend strong; supply normal; $65.10 ton.

Los Angeles: Demand improved; trend stronger; lighter offers; $83.25@84.25, delivered CCP.

Chicago: Sales were slow during the week ending Aug. 15. Supplies continued adequate. No interest is apparently shown in this market due to the slowness of formula feed sales. Quotations: 44% soybean oil meal $63.50@64.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; large black $16 cwt., medium black $13.50 cwt., medium gray $13 cwt., small black and gray $10.50 cwt.

TANKAGE

Wichita: Demand fair; supply sufficient; 60% $77.50, f.o.b. plant.

Cincinnati: Demand fair; trend steady; supply fair; 60% digester $75@80.

Ft. Worth: Demand slow; supply sufficient; 60% digester $75@76, f.o.b. Ft. Worth.

Omaha: Demand good; supply adequate; $80.

St. Paul: Market stronger at $80 for 60% digester.

Kansas City: Demand fair to good; offerings fair; market steady; $77@80, sacked, Kansas City, for 60% digester.

Chicago: Demand fair; supply adequate; 60% protein $75@82.50.

New Orleans: Demand good; supply adequate; trend steady; 60% $82.50@90.

Louisville: Demand good; trend stronger; supply fair; $80@85.

HAY PROGRAM

(Continued from page 1)

was accepted only reluctantly by USDA officials.

How It Will Work

Here is the way this program will operate (and, importantly, this program or other types of hay or roughage programs are available for other states, subject to USDA-state government negotiation):

Eligible farmers and ranchers in "major disaster" designated counties—and currently there are 160 such counties in Texas—will receive certificates having a value of $7.50 per ton on hay or roughage purchased. This subsidy will be provided by federal funds under terms of an agreement between Secretary Benson and Gov. Allan Shivers of Texas.

The certificates will be issued through county committees as in the drouth emergency feed program. Such certificates will be redeemed through a clearing house bank within the state, which will in turn gain reimbursement from Commodity Credit Corp.

The state will pay certain administrative costs and will develop an arrangement under which banks of the state are expected to aid in handling the certificates so that they may be used as cash in making purchases, USDA explained.

The USDA announcement said the program is believed to be "more practical than hay programs in effect at intervals during the past three years." Under former programs, federal funds were used to pay one half of the transportation cost for moving hay into the drouth area, up to $10 per ton. Under the new cooperative plan, farmers will apply to their county Farmers Home Administration committee, and, if found eligible, will receive the purchase certificates. The certificates may then be used as part payment for roughage or hay.

Local Supplies

USDA officials here told Feedstuffs that it is likely that the program will give emphasis to purchase of local supplies of such commodities as alfalfa hay, plain hay, corn cobs, cottonseed hulls, Johnson grass and other roughage. Price-wise, it was indicated, the $7.50 ton subsidy may represent a substantial part of the cost of local roughage for cattle feeding unless the newly stimulated demand pushes up the local market price for the roughages.

USDA had urged Texas officials to accept its proposed hay program, which would have been actually a freight subsidy operation whereby USDA would finance imports of hay from surplus producing states such as Wisconsin, Minnesota and Illinois. Under this plan, it was thought, the government-financed new buying power would not run up local hay prices and wash out the subsidy benefits USDA planned.

Fingers at USDA are crossed on the Texas origin program, but since the local officials rejected the USDA plan, there was little for the federal officials to do other than go along with the local officials.

The Texas program or other feed relief of this nature will be available for other drouth states, but there is no frozen concept of programs for other states, USDA officials indicated.

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Turkey Advisory Committee Urges USDA Help for Orderly Marketing

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The Turkey Industry Advisory Committee of the U.S. Department of Agriculture met here this week with USDA officials and urged the government to consider purchase of turkeys for the school lunch program and other practicable ways to maintain orderly marketing of the turkey output this fall.

Turkey production this year has been zooming at a pace seen heading the industry into financial difficulties during the year-end marketing period and leading a prominent USDA official to comment to Feedstuffs: "The turkey industry is distinctive, it declines to make money two years hand-running."

This remark was provoked by the understanding that when the turkey industry has followed the advice and restraints of USDA specialists it has generally come through with reasonably good profit margins. But it has been the unfortunate sequence that one good profit year leads the turkey producers into production expansion programs which ultimately work out to their disadvantage.

It may be slyly suspected that the turkey industry felt that this being a political year, the USDA would be persuaded to invoke a school lunch program or some other form of indirect price support for this crop. This educated guess as to the probabilities may miss its mark since the administration — clearly politically minded in many of its decisions on price support operations — will find that the early November election will come well ahead of the peak marketing of turkeys.

It appears that the turkey industry will have to devise its own methods of escape from the over-production trap which seems forecast in the recent turkey crop reports. Such escape valves may be those of increased turkey sales promotion activities.

In its formal notice of the industry advisory committee session here this week, USDA stated: "A consensus of opinion at the meeting was that thus far this year turkeys have been moving into consumption at a good rate," a condition which may modify the peaking out of marketing of heavier weight birds.

ILLINOIS BROILER

(Continued from page 1)

the fat and increasing the protein to 30%.

In reporting the research results at the recent All-Industry Poultry Day at the university, Dr. Scott said that crossbred New Hampshire-Columbia chicks selected at random from the poultry farm flocks averaged 3.19 lb. at eight weeks of age. They needed 1.93 lb. of the revised ration to put on each pound of gain.

Feed conversion on the new ration was 20% better than any ration previously made up from common ingredients that had been tested in the Urbana laboratory, Dr. Scott said.

Other Reports

Each 100 lb. of this ration was listed as containing 46 lb. of ground yellow corn, 35.5 lb. of 50% protein soybean oil meal, 7 lb. of stabilized tallow, 2.5 lb. each of dried whey, distillers dried solubles and condensed fish solubles, 2 lb. of bone meal, a pound each of alfalfa meal and limestone, ¼ lb. of salt, ¼ lb. of B_{12}-antibiotic supplement, .1 lb. each of DL-methionine and vitamins A and D oil, .05 lb. of feed grade manganese sulphate, 800 milligrams of niacin and .00625% of DPPD.

Other research reports during the day's program included a study of labor efficiency on Illinois poultry farms by Roy N. Van Arsdall, and results of the 1954-55 poultry cost study by W. N. Capener, both of the department of agricultural economics at the University of Illinois. Dr. L. E. Hanson, College of Veterinary Medicine, reported on the current poultry disease picture in the state.

The afternoon session was concerned with activities of the poultry industry headed by a discussion of the expanded program of the Illinois Poultry Industry Council by Ralph Thomas, council president, Sycamore.

Clinton Cutright, Effingham County farm adviser, moderated a panel discussion of the Effingham County poultry improvement program that centers its promotion around an annual egg breakfast.

Don Bray, extension poultry specialist at the College of Agriculture, reported results of the 1956 Illinois Junior Chicken-of-Tomorrow contest.

Following an open house at the poultry farm, visitors were served a broiler barbecue in the Livestock Pavilion sponsored by the Illinois Poultry Improvement Assn.

TWISTER

(Continued from page 1)

worst price debacle since it zoomed into high gear in the middle forties."

The price warnings are up, said Dr. Alfred Van Wagenen, NEPPCO's managing director and a marketing specialist. Feed companies, hatcheries and others would be well advised to tighten their belts for the blow, he declared.

"The view," NEPPCO said, "is shared, by and large, by everyone in the broiler industry from professional forecasters right down to grassroots growers. Whether anything is done about it remains to be seen."

The council cited the efforts of the Southeastern Poultry & Egg Assn. to bring about a voluntary cutback of broiler output. (Feedstuffs, Aug. 11.)

"Financial Twister"

A survey of NEPPCO field reporters late in July brought an almost universal recommendation for sharp cutbacks in broiler chick production and placements. None seemed to doubt that a "financial twister" was on the way for the broiler industry.

Most suggestions, according to NEPPCO, fell into these categories:

1. That hatcherymen set only on the basis of firm orders. In other words no eggs should go into the incubators in the hope that a market for the resulting chicks will develop.
2. Clearly outline the situation to growers, processors, feed men and hatchery operators.
3. Curtail breeder flock numbers by stringent culling.
4. Expand broiler promotion efforts to encourage consumer buying.

Three words were said to sum up most answers to the problem—"Set fewer eggs." And in some market egg areas, observers added a footnote to that comment—"Do something to divert the resulting hatching eggs and keep them from breaking the table egg market."

"One thing is sure," said NEPPCO. "Batten down the hatches. Price trouble is on the way."

COOPERATIVE BUYS MILL

NEW LONDON, WIS.—The New London Cooperative Exchange has purchased the LaMarche Feed Store and Mill at 108 S. Pearl St., according to Edwin Krause, general manager of the cooperative. The cooperative will continue to operate its own mill and store in addition to the newly-acquired facilities. Carl Heinrick, former employee of the LaMarche mill, will be foreman of the new operation.

CREEP FEED

(Continued from page 1)

substance has become well established in fattening cattle and, heretofore, has been used only for cattle weighing more than 600 lb. The new approval, the General Mills announcement pointed out, makes it possible for the company to produce a creep feed with this estrogen for calves as soon as they start eating grain—calves which are not to be used for breeding purposes.

Research Results Cited

Larro Research Farm experiments which demonstrated the value of stilbestrol for calves showed that calves averaged nearly 10% faster growth and at an increased profit over feed cost of $11.23 per calf, the company said.

Under Project BC54-1 supervised by Dr. C. B. Knodt, it was found that stilbestrol added to the creep feed increased the rate of gain in body weight in steer calves by 10.6% and in female calves by 9%.

Feed consumption during 168 days of creep feeding studies was increased by 1%. Growth rates were said to be "outstanding," with steer calves weighing as much as 608 lb. at the time of weaning at 6½ months of age. The average for all steer calves at 6½ months weaning age was 575 lb. in the estrogen-fed group vs. 535 lb. for the control-fed steers receiving "Larro SureCreep" without stilbestrol. Heifer calves receiving the creep feed with stilbestrol averaged 457 lb. at the same age when weaned, compared with 430 lb. for those receiving the feed without stilbestrol.

All groups were comparable in body weights at the beginning of the test.

"It was found that the addition of diethylstilbestrol did not affect the palatability of the creep feed," the announcement said. "Calves ate readily the commercially produced Larro SureCreep containing the diethylstilbestrol. Moreover, these cattle developed normally in every observable respect.

Safe for Human Consumption

"Assays of various edible tissues from calves fed diethylstilbestrol have shown such tissues to be entirely safe for human consumption. Estrongenic bio-assays of lean meat removed from the 13th rib area of the experimental steers showed no significant difference between the negative controls receiving no added estrogen and those cattle receiving stilbestrol in their Larro SureCreep throughout the creep feeding period.

"For instance, the resulting data showed only 0.6 to 1.8 parts of estrogen (expressed as diethylstilbestrol) per billion parts of tissue for all tissue samples assayed; this means that it would be physically impossible for any human to consume daily the 1,222 or 3,666 lb. of meat necessary to approach a typical therapeutic daily dose of 1 milligram of diethylstilbestrol."

General Mills said development of a creep feeding program using stilbestrol is only a part of a series of extensive investigations of hormone feeding at the Larro Research Farm.

Other Hormone Studies

Other projects which were cited include controlled comparisons with Hereford cows which were fed stilbestrol starting about three months in advance of the breeding season and continuing throughout the gestation period without any ill effects in terms of heat periods, normal gestations, calvings or milk production.

Still other cattle, now at about 28 months of age, have received stilbestrol daily in their supplement under controlled experimental conditions ever since creep feeding was started in calfhood. These cattle are being continued on the long-time studies of stilbestrol feeding to help answer certain basic and practical questions facing cattlemen and researchers today, Dr. Bechtel said.

"Already, sufficient research data have been obtained in certain other controlled projects to throw considerable doubt on recommendations calling for the simultaneous use of daily feedings of certain antibiotics along with stilbestrol to fattening cattle," General Mills said.

SOYBEAN INDUSTRY

(Continued from page 7)

was a good idea and might help to handle the mounting soybean production without the industry's needing government assistance.

Market Promotion

The newly formed Soybean Council of America has as its main purpose the promotion of both domestic and export markets for soybean products and soybeans. George M. Strayer, executive director of the council, reported to the group on his recent tour of Europe where he made a survey with an eye to increased markets for products of U.S. soybeans.

"There is a great need today for the enterprise of the traditional Yankee trader," he said. "Soybeans are not in surplus position, but unless we take every possible step to keep them out of that position, we are going to be in trouble this year."

Mr. Strayer has recommended to the Department of Agriculture the setting up of a soybean export market development agreement between USDA's Foreign Agricultural Service and the Soybean Council of America, with a general office in Europe, possibly in Rotterdam. He suggested that the first market development project be set up at the earliest possible date in Spain to cover technical work badly needed by the Spanish vegetable oil industry. He suggestes that this would be followed by work in Italy, Germany, the Netherlands and Austria, in that order.

A smiliar market development project for U.S. soybeans is now in operation in Japan.

Mr. Strayer sees a continuing good market to be had in Europe for both soybeans and fats and oils for a good many years if it is promoted. He indicated a potential increase of 60 to 70% over a period of years.

Extremely hard freezes of the past two winters, together with cold weather experienced last spring, have cut the olive crop in the Mediterranean countries far short of needs.

"In both Spain and Italy there will be continuing need for oil imports for at least five years, as replacement for olive oil," he said. "I am convinced that as soybean oil is used in those countries, when the people learn to know it and learn how to use it, there can be a market for soybean oil in those areas through a long period of years.

"Germany, the Netherlands, Denmark, Sweden, Norway, Belgium, France and England all have oilseed crushing facilities, have purchased American soybeans in varying amounts. There is a market for protein meals in their livestock economies, and there is an increasing awareness of the value of soybean oil meal as compared with the others."

The Soybean Council of America was formed as an industry-wide nonprofit organization with the purpose of broadening the markets for soybean products to keep soybeans out of the surplus class. The Council will be financed by voluntary contributions of producers and others in the soybean industry.

Price Outlook

T. A. Hieronymous, associate professor of agricultural economics, University of Illinois, in discussing the price outlook for the 1956 soybean crop, said:

"If I have to pick one single price as the most likely average for the year October, 1956, through Septem-

ber, 1957, I will say $2.10 bu. at East-Central Illinois points, bid to farmers.

"It is very early in the season to be forecasting soybean prices, because of the uncertainty about this year's production. Last year the final crop estimate was 12% below the Aug. 1 estimate. In 1954, the final was 13% above the Aug. 1 estimate. The Aug. 1, 1956, USDA crop estimate was 443 million bushels. That's up 72 million bushels from last year's 371 million bushels. Production has increased by 50% in the last three years.

"To help offset this higher domestic production, exports have been increasing and should go up again this year. A total of 75 million bushels seems to be a likely figure.

"Allowing 75 million bushels for export, 30 million bushels for seed and 20 million bushels for carryover, the crush will be 323 million bushels. This crush will make 7.6 million tons of meal and 3.6 billion pounds of oil.

"After allowing for domestic use, the exportable surplus of edible fats and oils will be about 100 million pounds less than this year. The export situation in 1955-56 was greatly aided by a small olive crop in the Mediterranean area and a small sunflower seed crop in Argentina. On the basis of current estimates, both of these crops are larger than last last year. Demand for U.S. fats and oils will be less vigorous this year and prices can be expected to average lower.

"The basic demand for U.S. fats is strong, because of increased population, world prosperity and pressure for better diets.

Huge Meal Tonnage

"An increase of 1,100,000 tons of soybean meal from last year's record crop should result in soybean meal selling in competition with corn on a nutrient basis. The market can absorb the huge tonnage, but the size of the increase may be too big to digest in one year. Livestock numbers will be down as a result of declining hog population.

"Regarding the seasonal variation in soybean prices, we should emphasize three points: (1) In recent years the price of soybeans has been about as apt to go down as up after harvest; (2) if the tremendous supply materializes, and if currently indicated supplies of fats and oils outside the U.S. are correct, there is very little chance of a major increase in the price of soybeans in the year ahead; and (3) the effectiveness of the loan rate in preventing price decline after harvest has never been tested.

"Because the estimated economic value of soybeans is less than the loan rate, there is now danger that substantial quantities will be impounded under the loan program and that a surplus will develop," Prof. Hieronymous concluded.

Industry Outlook

In another convention talk, before the processors' group, Prof. Hieronymous discussed some of the growth problems of the soybean processing industry. He commented on the long term outlook for the industry and went on to discuss technological, governmental, pricing and other problems.

As part of his discussion of the outlook for meal, he noted that further increases in production of formula feeds seem likely and that the feed industry will require increasing quantities of protein feeds like soybean oil meal.

In connection with the market for meal, he also pointed out that there are limits to the rate of expansion, however. Even though the market may ultimately absorb meal from as much as 1 billion bushels of soybeans, the increase in any one year is limited.

(Prof. Hieronymous' talk will appear later in Feedstuffs.)

Another processors' association speaker, Dwight P. Joyce, chairman and president of the Glidden Co., remarked briefly on the growing pains of the soybean processing industry and then went on to list and discuss some of the economic and personal blessings which any businessman or person in America has.

Disease Losses

Annual losses due to disease amount to about 12½% of the nation's soybean crop, said John Dunleavy, Iowa State College pathologist, in an address before the convention.

Mr. Dunleavy said there are about 50 diseases affecting soybeans in the U.S.—as compared with over 300 on the potato crop—and that about 15 "are serious enough to present real problems to growers over wide areas."

The problem, he said, is not simply one of finding a chemical that will kill the disease organism without killing the plant. The material must be easy to apply or few will use it. It must be cheap or few will buy it, and it must be non-toxic to humans and animals.

A delegation of seven representatives of the soybean industry in Japan attended the convention and will later tour the soybean growing and processing areas of the U.S.

"We look on this as a most important visit, since Japan is the No. 1 customer for U.S. soybean products abroad," said Mr. Strayer. "Our visitors will become acquainted with the way we grow, market and process soybeans, and this should result in closer relateionships between the American and Japanese soybean industries, and an expanding market for U.S. soybeans in Japan."

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NORTH CAROLINA

(Continued from page 6)

tion of whether the food for a man obtained from treated animals could possibly have any adverse effects on the human consumer.

In the production of medicated feeds, Dr. Collins urged that great care be used. Also, frequent chemical or biological assays of finished medicated feeds for checking the presence of declared drug ingredients in correct amounts and the absence of contaminants in any amounts are to be recommended.

Lloyd Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City, told the story of the feed technology program at Kansas State College, Manhattan, Kansas, during his discussion of "A New Career," Aug. 11. Fred A. Greene, Interstate Milling Co., Charlotte, N.C., presided during the final session.

Mr. Larson told how the feed industry contributed a half a million dollars to build the school at Manhattan, with machinery being installed by equipment manufacturers. However, he said the work and responsibility of the feed industry have not ended with the construction work. One of the problems which must be faced is to secure enrollment. He said that the future welfare of the industry is tied to the school, and he urged that industry members do all they can to guide high school graduates and other eligible people to a career in the feed industry.

Mr. Larson was introduced by Samuel Golden, the Amburgo Co., Philadelphia.

Feed Packaging

The final speaker on the program was M. J. Davis, president of the Hammond division of the Hudson Pulp & Paper Corp., Wellsburg, W. Va. During his discussion of feed packaging, Mr. Davis pointed out that with the exception of the 10-lb. and 25-lb. sizes, most livestock and poultry feeds had, for many years, been regularly packed in burlap and cotton bags. In the late 40's, however, a few midwestern feed manufacturers began to experiment with the packing and shipping of hog and other feed in the large multiwall paper shipping sacks. Continued development established this as a satisfactory method of packaging feeds and the use of multiwalls by the feed industry has grown steadily since that time.

Demand for multiwall paper shipping sacks by the feed industry since 1951 rose 119% up to 1955, and demand continues to expand in 1956, Mr. Davis said. The first calendar quarter of the year in 1956 showed an increase in demand for multiwall feed sacks of 14% over the first quarter of 1955. There are 82 plants in the U.S. manufacturing multiwalls for feed.

Some of the advantages of multiwalls reported by Mr. Davis are (1) Low initial cost. (2) Sanitation—multiwall protection against mold and all forms of contaminations from without. (3) Multiwalls offer a logical container for scientific feeding formulas because they promote exact feeding proportions, preserve the palatability of the feed and retain the potency of the vitamin, mineral and chemical additives. (4) Ease of handling the 50 lb. sacks, which are the most popular size. (5) Non-skid inks facilitate stacking, and easy opening devices save the farmer's time. (6) There is no loss through sifting or clinging of feed to fabric or seams; sacks shake out clean. (7) Cleaner storage rooms with less rodent infestation. (8) Multiwalls offer bright attractive color printing and greater legibility of ingredient content. (9) Easy disposal of empty sacks—no harboring of rats or mice. (10) Multiwalls are new, clean and disease-free and have never been on another farm. (11) They are rain and snow resistant. (12) They promote the keeping of accurate records of consumption and quick detection of loss of appetite of birds and animals. (13) Multiwalls are clean to handle in customer's car.

A social hour preceded the annual banquet. The period was sponsored by the allied association. A complete program of entertainment was offered to the ladies, including a bridge party, a guided tour of ante-bellum homes in the area, as well as opportunities for swimming, deep-sea fishing, and other activities. Hostess for the ladies was Mrs. Seth Bostick, Charlotte, N.C.

MARKETS

(Continued from page 2)

mill operations were mostly on a four- or five-day, one shift basis—the lowest for the year to date.

Southeast

This section of the country is still experiencing dull feed business as has been the case for quite a few weeks. There has been no noticeable change, with poultry feeds holding a wide lead over all others.

Chick placements continue to run about 15% more than the corresponding week last year. Hot weather is causing some early marketing of light weight birds at some markets. This, of course, cuts into feed

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consumption to a certain degree, but placements more than offset this condition to hold demand at a good rate.

New crop cottonseed meal and hulls is offered for immediate shipment from a few crushing mills. Buying has been slow, but with so few offers available there doesn't seem to be any meal pressing on the market as yet. Most purchasing agents for feed manufacturers seem to be of the opinion that prices will work lower as more oil mills come into production.

Fishing operations have remained very poor on the East Coast and on the Gulf. It is expected to remain this way since the first hurricane of the season is moving up the coast at this time. Warehouse supplies of fish meal are reported to be very light.

The southeastern corn crop looks very good, and barring hurricane damage such as occurred last year in the Carolinas, it should equal or exceed last year's bumper crop. Most shipments being made into the area at present, light though they may be, are coming in by rail. The critically tight trucking situation continues, and this has raised delivered prices on most ingredients. Ample supplies of trucks are not expected before October.

Northeast

Demand for feeds improved, the outlook is more promising and the trade in this area feels the worst of the recent slump is over. The better market brought an increase in running time of formula feed manufacturers.

Efforts to bring stability into the broiler market by reducing the number of chicks has hampered broiler feed sales, and bran demand has lanquished because cool, wet weather has produced lush pastures.

The bulk of sales fell to egg mashes, with turkey feed sales mounting as the birds increase in size.

Broiler prices are below 20 cents a pound in most areas, a level at which it is difficult for growers to make a profit. Egg prices held about steady.

Running time of formula feed manufacturers was stepped up to 40 hours from 36 hours in the previous period.

Pacific Northwest

The formula feed business continued quiet, and there was little of note in the trade.

Buyers were watching the daily fluctuations of the soybean meal market but were not too interested in old crop quotations, and there is virtually no trading in new crop because buyers feel that there is no incentive to go out ahead in face of the tremendous crop in sight.

Millfeed was easy, meat scraps were soft, the hay market does not have much life, and while barley and oats were holding their own, buyers were not booking very much ahead, and were picking up supplies as needed.

Feed business maintained about a normal volume for this time of the year, with the exception of dairy feeds, which are off considerably. However, the end of the turkey feeding season is now in sight, and feed men are pulling down their inventories as fast as possible. Most of the trade is already buying on an as-needed basis, and those who had accumulated stocks in anticipation of rises are liquidating. This is particularly true of soybean meal.

Plant running time was steady at a five-day week, eight hour shifts.

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